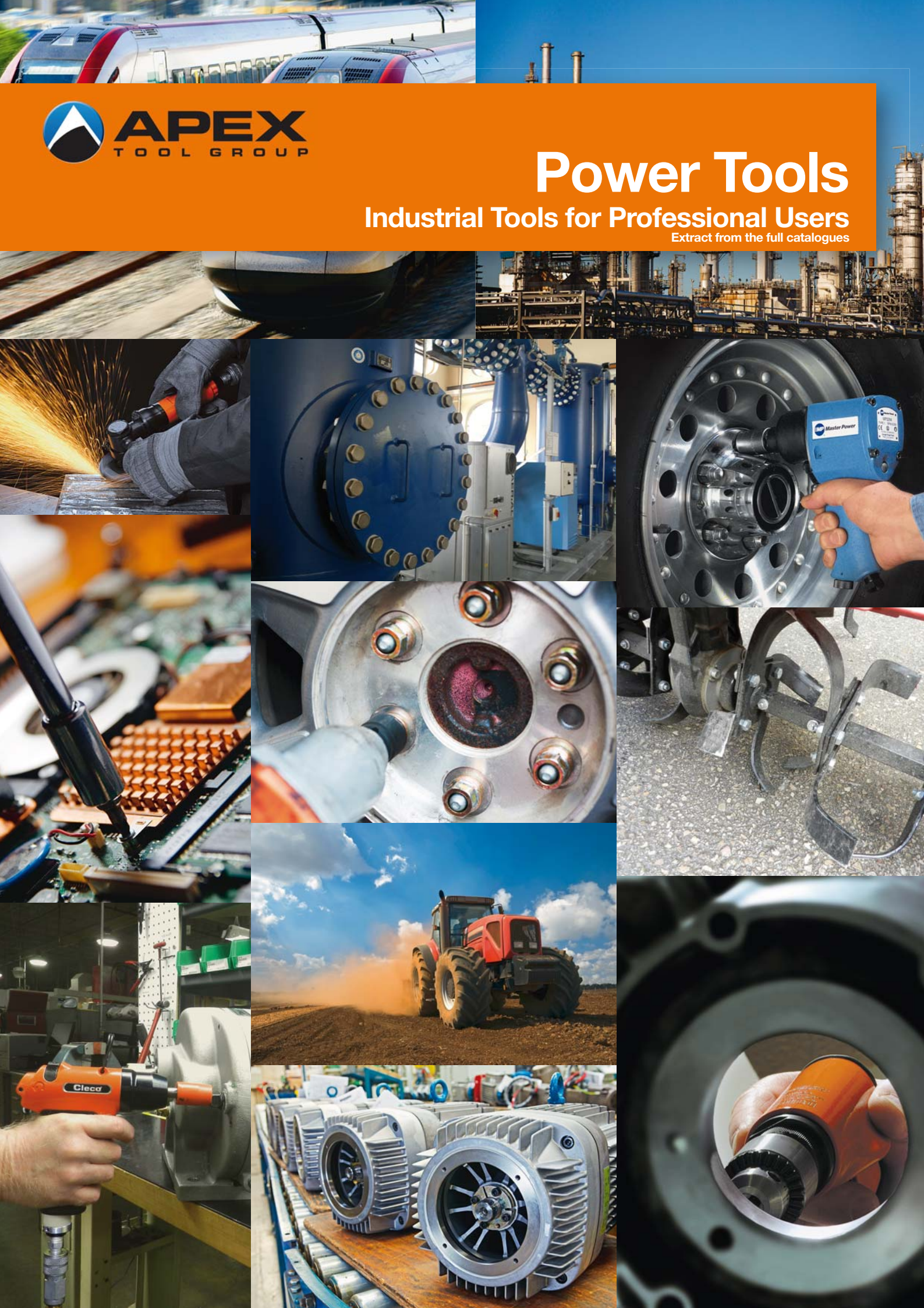




# Power Tools

Industrial Tools for Professional Users

Extract from the full catalogues





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## Brief Overview

### Cleco®

Assembly tools and material removal tools. With more than 100 years of experience in precision manufacturing, Cleco is the first choice worldwide especially for discerning demands in hand-held assembly tool technologies.



### Airetool®

Tube cleaner- and tube expander technology as well as rolling motors. Well-known machines and tools in the industry applied for manufacturing and maintenance of heat exchangers, coolers, condensers or vessels.



### DOTCO®

Material removal tools, drills, grinders, polishers. Ergonomically designed tools for discerning material removal applications. Dotco is well-known for durable and reliable tools and accessories.



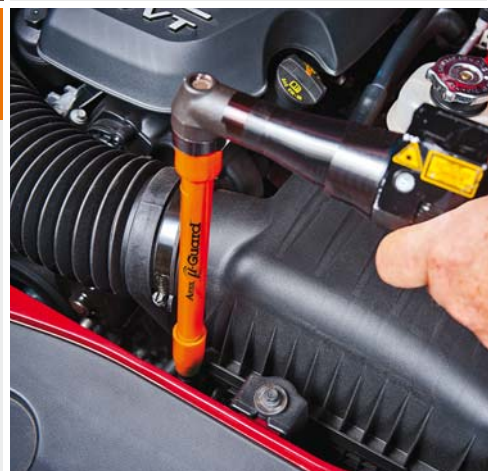
### MP Master Power™

Assembly-, material removal- and finishing tools. More than 70 years of experience are integrated into the high quality pneumatic tools for industrial fastening-, drilling-, cutting-, grinding- and finishing applications.



### APEX®

Bits, sockets and universal joints. One of the leading and most comprehensive product lines for sockets, bits, extensions and protective covers up to universal joints for industrial applications.





**Model DAS-100-TRS**

Rolling systems for workbench mounting and for applications with 1/4" to 5/8" tube outside diameter

- Robust design
- Trigger start for each cycle
- Makes it possible to align the expander
- Absorbs the torque
- Supports up to 3 kg
- Increases productivity
- Lower force application due to ergonomic design
- Developed for usage with the series 800, 900 and 1300 tube rollers



## Operation

Air cylinders provide the counterweight to the arm. To ease operation, the pressure can be adjusted to suit the weight of the tool. The modified 720 Airetool rolling motors are switched on using a trigger start. Once the tube expander is positioned in the tube, the motor starts to expand the tube in a forward direction with gentle forward pressure. As soon as the torque set is reached, the motor switches automatically to counter clockwise and the tube expander can be removed from the tube.

The tube expander is spring mounted and therefore remains in its retracted position to ease insertion in the tube. The expander holder also prevents the tube spinning during the expanding process.

**Three models are available:**

- DAS 100 TRS 720 2500 for tube sizes 1/4" outside diameter.\*
  - DAS 100 TRS 720 1800 for tube sizes 3/8" – 1/2" outside diameter.\*
  - DAS 100 TRS 720 550 for tube sizes 1/2" – 5/8" outside diameter.\*
- Post height: 29"  
Total horizontal length: 77"  
Total vertical length: 14.5"

Model Number	Part Number	Speed & Torque at 6.2 bar Air Pressure*					CFM	Chuck	
		Speed (rpm)	Max. Torque		Min. Torque			Incl.	Opt.
			in. lbs.	Nm	in. lbs.	Nm			
DAS 100 TRS 720 2500B	5525242	2500	20	2.29	2	0.23	17	1/4"	3/8"
DAS 100 TRS 720 1800B	5525243	1800	27	3.05	2	0.23	17	1/4"	3/8"
DAS 100 TRS 720 550B	5525244	550	75	8.47	2	0.23	17	3/8"	1/4"

\*Varies with tube material, gauge and bore size of the tube sheet.

# Airetool Heat Exchanger & Condenser Tube Expanders Overview



## The World Standard for Tube Expanders

Airetool heat exchanger and condenser tube expanders have long been recognised as the standard against which all other brands are measured. The additional time we invest in the manufacturing of our expanders results in the consistent performance and incredible durability as expected by heat exchanger OEMs.

## Tube Expanders

Tube expanding is the art of cold forming the ends of tubes to provide close contact with the metal of the surrounding tube bores to form a tight mechanical seal and/or connection. In other words it is a mechanical method for creating a mechanical connection between a tube and a tube bore.

Airetool manufactures condenser, heat exchanger, boiler and furnace expanders as well as a large number of expanders for special applications.

### Tube expanders comprise:

**Mandrel:** A conical pin in the centre that presses the rolls against the tube when it is driven forward.

**Rolls:** A set of three or more conical cylindrical parts that are driven by the mandrel and that are in contact with the tube walls to be expanded. The taper on the rolls is in the opposite direction and is half the taper on the mandrel on a parallel roller.

**Cage:** This is the housing of the expander, as it fixes the mandrel and the rolls. The recesses that contain the rolls also have a feed angle that draws in the mandrel to provide the expansion of the rolls.

Mandrel, rolls and cage are three components you will find in all expanders. Other parts classify the expander model.

**Thrust assembly:** This assembly sits on the cage and permits the adjustment of the expansion depth. The thrust collar remains stationary at the tube sheet or at the end of the tube while the cage, mandrel and rolls expand the tube. You will find the thrust assembly on condenser, heat exchanger, some furnace and special application expanders.





## Series G-900

Outside diameter: 1/4" – 3/8" (6.3 – 9.5 mm)

- Expander with 3/4" (19.0 mm) long rolls, accommodates tube sheet thicknesses from 1/4" to 3/4" (6.3 to 19.0 mm)
- Expander with 1-1/4" (31.7 mm) long rolls, accommodates tube sheet thicknesses from 3/4" to 1-1/4" (19.0 to 31.7 mm)
- These expanders accommodate a large range of tube sheet thicknesses.



## Series G-1300

Outside diameter: 3/8" (9.5 mm)

- Expander with 3/4" (19.0 mm) long rolls, accommodates tube sheet thicknesses from 3/4" to 3" (19.0 to 76.2 mm)
- Expander with 1-1/4" (31.7 mm) long rolls, accommodates tube sheet thicknesses from 1-1/4" to 3-1/2" (31.7 to 88.9 mm)
- These expanders accommodate a large range of tube sheet thicknesses.



## Series G-800 – 3-rolls

Outside diameter: 1/2" – 1-1/2" (12.7 – 38.1 mm)

- Expander with 1-1/2" (38.1 mm) long rolls, accommodates tube sheet thicknesses from 1/2" to 1-1/2" (12.7 to 38.1 mm)
- Expander with 2-1/4" (57.1 mm) long rolls, accommodates tube sheet thicknesses from 1-1/4" to 2-1/4" (31.7 to 57.1 mm)
- New reversible thrust collar design:
- One expander provides flush and 1/8" recess tube rolling.



## Series G-1200 – 3-rolls

Outside diameter: 1/2" – 1-1/2" (12.7 – 38.1 mm)

- Expander with 1-1/2" (38.1 mm) long rolls, accommodates tube sheet thicknesses as follows:  
STD. version 1/2" – 5" (12.7 to 127.0 mm)  
"A" version 1/2" – 7" (12.7 to 177.8 mm)  
"C" version 7/8" – 11" (22.2 to 279.4 mm)
- Expander with 2-1/4" (57.1 mm) long rolls, accommodates tube sheet thicknesses as follows:  
STD. version 1-1/4" – 5-3/4" (31.7 to 146.0 mm)  
"A" version 1-1/4" – 7-3/4" (31.7 to 196.8 mm)  
"C" version 1-5/8" – 11-3/4" (41.3 to 298.4 mm)
- New reversible thrust collar design:
- One expander allows flush and 1/8" recess tube rolling.

NOTE: Step expanding is necessary if the tube sheet thickness exceeds the length of the rolls. Longer reaches are available on demand in 6" (50.8 mm) steps. Information on tube sizes not mentioned will be provided on request.

# Airetool Accessories

## Cleco® Drills Series 15DP

Can be used with Airetool tube end facers and push-type tube cutters.



Model Number	Speed (rpm)	Chuck Capacity	Weight
		mm	kg
15DP-1.6B	160	13	0.27
15DP-4B	400	13	2.5
15DP-8B	800	13	2.5
15DP-14B	1400	10	2.0

## Cleco® Drills Series 135DPV

Variable torque controlled drill. One tool for a large number of applications. Can be used with Airetool tube end facers and push-type tube cutters.



Model Number	Speed (rpm)		Chuck Capacity	Weight
	No-Load	Governed	mm	kg
135-DPV-7B-43	600	150 - 550	10	1.6
135-DPV-14B-51	1250	400 - 1200	8	1.5
135-DPV-28B-51	2600	700 - 2400	8	1.4

## Tube End Facers



Tube Outside Diameter mm	Tool Number	Gauge	Spare Bits	
			Non-Ferrous or Carbon Steel	Stainless
9.5	TEF-375 (5519632)	16 - 20	TEF-376 (2987908)	TEF-376-SS (2991788)
12.7	TEF-500 (5332415)	16 - 20	TEF-506 (2662531)	TEF-506-SS (2983169)
15.8	TEF-625 (5332425)	14 - 18	TEF-626 (2662558)	TEF-626-SS (2983170)
19.0	TEF-750 (5332450)	10 - 18	TEF-756 (2662585)	TEF-756-SS (2983162)
22.2	TEF-875 (5332460)	14 - 18	TEF-876 (2662603)	TEF-876-SS (2983163)
25.4	TEF-1000 (5332475)	10 - 18	TEF-1006 (2662633)	TEF-1006-SS (2983164)

A set of gauges is supplied with the tube end facer tools given above. Other sizes are also available. Contact your distributor for further details.

## Beading Tool\*



Part Number	Stock Number	Radius	Shank Type
12-RM-9-5/32-R-01	2968677	5/32"	Type 01
12-RM-9-1/4-R-01	2968676	1/4"	(0.680" round x 2 3/8" long)

\* Only available on quotation.

## Belling and Flaring Tool



Belling tool: Pilot end fits in tube inside diameter with type 01 retainer.

State the tube outside diameter, gauge and radius in tube sheets.



## Extensions with Quick-Change Chuck

Use different extension lengths for difficult to access tubes. The quick-change chuck enables the operator to change the expander quickly. State the size of the square drive and the extension length.

Quick-Change Extension Complete	Stock Number	Square Drive Size Male/Female	Overall Length
			mm
•QC-375-6	5501200	3/8" (9.5 mm)	152
QC-375-8	5501600	3/8" (9.5 mm)	203
QC-375-12	5502000	3/8" (9.5 mm)	305
•QC-375-18	5503000	3/8" (9.5 mm)	457
QC-375-24	5504000	3/8" (9.5 mm)	610
QC-375-30	5504500	3/8" (9.5 mm)	762
QC-375-36	5505000	3/8" (9.5 mm)	915
QC-500-12	5507000	1/2" (12.7 mm)	305
QC-500-18	5508000	1/2" (12.7 mm)	457
•QC-500-24	5509000	1/2" (12.7 mm)	610
QC-500-30	5510000	1/2" (12.7 mm)	762
•QC-500-36	5511000	1/2" (12.7 mm)	915

## Sleeve Type Extensions

Can be used where tubes are near to the shell of the condenser. The small diameter at the end permits access to these tubes.

Quick-Change Extension Complete	Stock Number	Square Drive Size Male/Female	Overall Length
			mm
3/8 x 12	5515758	3/8" (9.5 mm)	305
•3/8 x 18	5513774	3/8" (9.5 mm)	457
•3/8 x 24	5515759	3/8" (9.5 mm)	610
•3/8 x 36	5515761	3/8" (9.5 mm)	915
•1/2 x 12	5515733	1/2" (12.7 mm)	305
1/2 x 18	5513775	1/2" (12.7 mm)	457
1/2 x 24	5515734	1/2" (12.7 mm)	610
•3/4 x 12	5515735	3/4" (19.0 mm)	305
•3/4 x 18	5515736	3/4" (19.0 mm)	457
•3/4 x 24	5515737	3/4" (19.0 mm)	610

## FT-515 – 60° Flaring Tool

Developed for flaring tubes with outside diameter 1/2" – 1-1/2" (12.7 – 38.1 mm). Available with 01 or 06 round shank, can be used with standard chisel hammers.







### Universal Joints and Extensions

Can be used for difficult to access tubes, the universal joint operates smoothly and without binding. State the size of the square drive and the extension length.



### Tube Expander Lubricant "LUBE-A-TUBE"

- A water-soluble lubricant, specially manufactured for usage with tube expanders.
- It prevents rust and acts as a coolant for longer service life and gentler rolling.

Universal Joints	Stock Number	Square Drive Size Female	Overall Length
			mm
3/8 x 3/8	2115300	3/8" (9.5 mm)	64
•1/2 x 1/2	2039800	1/2" (12.7 mm)	70
•3/4 x 3/4	2974913	3/4" (19.0 mm)	89

Universal Extensions	Stock Number	Square Drive Size Male/Female	Overall Length
			mm
GP-3/8 x 6	5514896	3/8" (9.5 mm)	152
•GP-3/8 x 12	5514898	3/8" (9.5 mm)	305
•GP-3/8 x 18	5514899	3/8" (9.5 mm)	457



### GT Serrating Tools

- Compact design for extreme stability, increased bit life, less impact and improved accuracy
- Unique coolant system through the spindle offers excellent groove quality and unmatched bit service life
- New and improved bit design permits exactly positioned coolant
- Tool design permits simple bit replacement
- Carbide inserts remove burrs from the grooves, as a consequence additional de-burring is not necessary

Sheet Hole mm	INCH Tool Number	Shank	Standard Bit 1/8 x 1/4 x 1/8	Opt. Bit 1/8 x 3/8 x 1/8	Metric Tool Number	Shank	Standard Bit 3 x 6 x 3	Opt. Bit 3 x 10 x 3
12.7	GT 500 1270 (5526083)	3MT	GT 5003 S (2902039)	GT 5003 (2902030)	GT 500 1270M (5526115)	3MT	GT 50 363 (2902091)	GT 50 3103 (2902117)
15.8	GT 625 1588 (5525886)	3MT	GT 5003 S (2902039)	GT 5003 (2902030)	GT 625 1588M (5526116)	3MT	GT 50 363 (2902091)	GT 50 3103 (2902117)
19.05	GT 750 1905 (5525756)	3MT	GT 7503 S (2901403)	GT 7503 (2900686)	GT 750 1905M (5526117)	3MT	GT 75 363 (2902092)	GT 75 3103 (2902118)
22.2	GT 875 2223 (5525587)	3MT	GT 7503 S (2901403)	GT 7503 (2900686)	GT 875 2223M (5526118)	3MT	GT 75 363 (2902092)	GT 75 3103 (2902118)
25.4	GT 1000 2540 (5525706)	3MT	GT 7503 S (2901403)	GT 7503 (2900686)	GT 1000 2540M (5526119)	3MT	GT 75 363 (2902092)	GT 75 3103 (2902118)
19.05	GT 750 1905 1SP (5526137)	1" Rd	GT 7503 S (2901403)	GT 7503 (2900686)	GT 750 1905M 1SP (5526164)	1" Rd	GT 75 363 (2902092)	GT 75 3103 (2902118)
25.4	GT 1000 2540 1SP (5526138)	1" Rd	GT 7503 S (2901403)	GT 7503 (2900686)	GT 1000 2540M 1SP (5526165)	1" Rd	GT 75 363 (2902092)	GT 75 3103 (2902118)

• Only available on quotation.

## Airetool Tube Cutters

**Airetool RCM One Revolution** tube cutters are suitable for inch and metric tube sizes. For cutting tubes in heat exchangers, condensers and boilers.

Available in standard reaches of 6" (152 mm) and 10" (254 mm), longer reaches are available in 10" (254 mm) steps on request. These tube cutters were developed for manual use in conjunction with a ratchet or a hand wrench. Series RMC tube cutters are also excellent tools for puncturing faulty tubes prior to tube plugging, preventing a pressure build-up in plugged tubes.



Outside Diameter	BWG	Tube Inside Diameter	Tool Number	Bit
1/2"	18 - 19	0.400" - 0.420" 10.2 - 10.7 mm	RCM-105 5522994	RC-500-2 2993368
1/2"	20	0.430" - 0.450" 11.0 - 11.3 mm	RCM-110 5522929	RC-500-2 2993368
5/8"	14	0.450" - 0.470" 11.4 - 11.9 mm	RCM-115 5522995	RC-625-2 2993372
5/8"	15 - 16	0.472" - 0.510" 12.0 - 12.9 mm	RCM-120 5522930	RC-625-2 2993372
5/8"	17 - 18	0.500" - 0.531" 12.7 - 13.5 mm	RCM-130 5522931	RC-625-2 2993372
5/8"	19 - 20	0.531" - 0.560" 13.5 - 14.2 mm	RCM-135 5522932	RC-625-2 2993372
5/8"	22	0.550" - 0.580" 14.0 - 14.7 mm	RCM-140 5522932	RC-625-2 2993372
3/4"	12 - 13	0.530" - 0.560" 13.5 - 14.2 mm	RCM-135-3/4 5523115	RC-750-2A 2995865
3/4"	14 - 15	0.580" - 0.610" 14.7 - 15.5 mm	RCM-150 5522933	RC-750-2 2993374
3/4"	16	0.600" - 0.630" 15.2 - 16.0 mm	RCM-155 5522997	RC-750-2 2993374
3/4"	17 - 18	0.625" - 0.650" 15.9 - 16.5 mm	RCM-160 5522934	RC-750-2 2993374
3/4"	19 - 20	0.660" - 0.690" 16.7 - 17.5 mm	RCM-170 5522934	RC-750-2 2993374
7/8"	14 - 15	0.700" - 0.730" 17.8 - 18.5 mm	RCM-180 5522936	RC-875-2 2993384
7/8"	16 - 17	0.740" - 0.770" 18.8 - 19.5 mm	RCM-190 5522937	RC-875-2 2993384
7/8"	18	0.760" - 0.790" 19.3 - 20.0 mm	RCM-195 5522998	RC-875-2 2993384
7/8"	19 - 20	0.780" - 0.810" 19.8 - 20.6 mm	RCM-200 5522938	RC-875-2 2993384
1"	12	0.760" - 0.790" 19.3 - 20.0 mm	RCM-195 5522998	RC-875-2 2993384
1"	14	0.820" - 0.850" 20.8 - 21.6 mm	RCM-210 5522939	RC-1000-2 2993394
1"	15	0.840" - 0.870" 21.3 - 22.1 mm	RCM-215 5522999	RC-1000-2 2993394
1"	16 - 17	0.860" - 0.890" 21.8 - 22.6 mm	RCM-220 5522940	RC-1000-2 2993394

Outside Diameter	BWG	Tube Inside Diameter	Tool Number	Bit
1"	18 - 19	0.890" - 0.910" 22.6 - 23.1 mm	RCM-230 5522941	RC-1000-2 2993394
1"	22	0.940" - 0.970" 23.9 - 24.6 mm	RCM-240 5522942	RC-1000-2 2993394
1-1/4"	12	1.020" - 1.050" 25.9 - 26.7 mm	RCM-260 5523000	RC-1250-2 2993404
1-1/4"	13 - 14	1.050" - 1.080" 26.7 - 27.4 mm	RCM-270 5523001	RC-1250-2 2993404
1-1/4"	15 - 16	1.100" - 1.130" 27.9 - 28.7 mm	RCM-280 5523002	RC-1250-2 2993404
1-1/4"	17 - 19	1.130" - 1.160" 28.7 - 29.6 mm	RCM-290 5523003	RC-1250-2 2993404
1-3/8"	13 - 14	1.180" - 1.210" 30.0 - 30.7 mm	RCM-300 5523709	RC-1500-2 2993417
1-1/2"	12 - 13	1.280" - 1.310" 32.5 - 33.3 mm	RCM-330 5523004	RC-1500-2 2993417
1-1/2"	14 - 15	1.330" - 1.360" 33.8 - 34.5 mm	RCM-340 5523005	RC-1500-2 2993417
1-1/2"	16 - 17	1.360" - 1.390" 34.5 - 35.3 mm	RCM-350 5523006	RC-1500-2 2993417
1-1/2"	18 - 19	1.390" - 1.420" 35.3 - 36.1 mm	RCM-360 5523007	RC-2000-2 2993427
2"	12 - 13	1.770" - 1.810" 45.0 - 46.0 mm	RC-2012 5521677	RC-2000-2 2993427
2"	14 - 15	1.820" - 1.860" 46.2 - 47.2 mm	RC-2014 5521678	RC-2000-2 2993427
2"	16 - 17	1.860" - 1.900" 46.2 - 48.2 mm	RC-2016 5521679	RC-2000-2 2993427
2"	18 - 19	1.890" - 1.930" 48.0 - 49.0 mm	RC-2018 5521680	RC-2000-2 2993427
2-1/2"	12 - 13	2.270" - 2.310" 57.6 - 58.6 mm	RC-2512 5521680	RC-2000-2 2993427
2-1/2"	14 - 15	2.320" - 2.360" 58.9 - 60.0 mm	RC-2514 5521682	RC-2000-2 2993427
2-1/2"	16 - 17	2.360" - 2.400" 60.0 - 61.0 mm	RC-2516 5521683	RC-2000-2 2993427
2-1/2"	18 - 19	2.390" - 2.430" 60.7 - 61.7 mm	RC-2518 5521684	RC-2000-2 2993427





The **Manual Tube Puller** offers an economical method for tube replacement.

- Easy to use – to insert the spear into the tube and remove you only need a hand wrench.
- No power supply required – the manual operation makes compressed air and electrical power unnecessary; for this reason the tube puller is ideal for applications in the field.
- Durable – key components have been manufactured using the highest quality steel and heat treated for an extra long service life.
- Easy to use in tight spaces – hex on the end of the spear permits attachment to the tube without dismantling the thrust mechanism.
- Clearly marked sizes, mandrel and thrust assembly are marked with tube sizes so that the tool can be quickly matched to the task.
- Large selection of sizes – specific pullers are made for tube outside diameter of 1/4", 3/8", 1/2", 5/8", 3/4", 7/8" and 1" and in this way cover the majority of common applications.

Tube Size				Tube Puller Complete		Spare Mandrel	
Outside Diameter	Gauge	Wall Thickness	Inside Diameter	Part Number	Stock Number	Part Number	Stock Number
mm		mm	mm				
6.35	18	1.24	3.86	JSP-250-18	5520136	JSP-1/4-18	2989364
9.52	16	1.65	6.22	JSP-375-16	5520914	JSP-3/8-16	2991563
9.52	18	1.24	7.04	JSP-375-18	5520030	JSP-3/8-18	2989016
9.52	20	0.88	7.75	JSP-375-20	5519932	JSP-3/8-20	2988750
12.7	14	2.11	8.48	JSP-500-14	5519689	JSP-1/2-14	2987297
12.7	16	1.65	9.40	JSP-500-16	5519690	JSP-1/2-16	2986892
12.7	18	1.24	10.21	JSP-500-18	5519070	JSP-1/2-18	2986893
12.7	20	0.88	10.92	JSP-500-20	5519691	JSP-1/2-20	2987298
15.88	14	2.10	11.66	JSP-625-14	5519692	JSP-5/8-14	2986894
15.88	16	1.65	12.57	JSP-625-16	5519693	JSP-5/8-16	2986895
15.88	18	1.24	13.39	JSP-625-18	5518868	JSP-5/8-18	2986771
15.88	20	0.88	14.10	JSP-625-20	5519694	JSP-5/8-20	2987182
19.05	14	2.10	14.86	JSP-750-14	5519695	JSP-3/4-14	2986896
19.05	16	1.65	15.75	JSP-750-16	5519696	JSP-3/4-16	2986897
19.05	18	1.24	16.56	JSP-750-18	5518804	JSP-3/4-18	2986364
19.05	20	0.88	17.27	JSP-750-20	5519697	JSP-3/4-20	2986769
22.22	14	2.10	18.01	JSP-875-14	5519698	JSP-7/8-14	2986898
22.22	16	1.65	18.92	JSP-875-16	5519699	JSP-7/8-16	2986899
22.22	18	1.24	19.74	JSP-875-18	5519071	JSP-7/8-18	2986900
22.22	20	0.88	20.45	JSP-875-20	5518700	JSP-7/8-20	2987534
25.4	14	2.10	21.18	JSP-1000-14	5519701	JSP-1-14	2986901
25.4	16	1.65	22.10	JSP-1000-16	5519702	JSP-1-16	2986902
25.4	18	1.24	22.91	JSP-1000-18	5519072	JSP-1-18	2986903
25.4	20	0.88	23.62	JSP-1000-20	5519703	JSP-1-20	2987209

Some parts are only available on quotation.

Other sizes are available. Contact your distributor for further details.

## Quality Fastening Tools

For more than half a century Apex has had a leading position among the suppliers of industrial fastening tools. A large number of sockets, socket combinations and other attachments developed by Apex are now industry standards. Quality, service and the selection from Apex offer you unmatched benefits.

### More Quality for Your Money

Apex quality starts with the selection of the raw materials. Only carefully selected high grade tool steel is used for Apex fastening tools. Each part is manufactured from bar material to the most demanding accuracy standards. You always have play-free, secure seating – seating that is not possible with pressed parts. Finally, each Apex fastening tool is hardened using our exclusive heat treatment process. During this step the level of hardness is selected to suit the application.

### Quick Delivery

As stock items, all standard parts in the Apex catalogue are available for immediate delivery. If you should need assistance with your order, your Apex distributor will be pleased to answer all your questions.

### Special Orders

Apex offers the largest available selection of fastening tools, from bits through sockets and universal joints to extensions, adapters and screwdrivers. Should you have a special application, please contact your Apex distributor. Maybe we have what you need in stock. Or we will develop and produce your special fastening tools for almost every application.

### Ordering Information

Apex products are marketed worldwide. For a catalogue of our range of Apex quality fastening tools or the address of your nearest Apex distributor, please visit our website

**[www.apexpowertools.eu](http://www.apexpowertools.eu)**.



Registered trademarks: HI-TORQUE, Voi-Shan; TORX, Camcar Division of Textron; ACR, POZIDRIV, TORQ-SET and TRI-WING, Phillips International Co.; SUPADRIV, EIS (Fasteners) LTD.; SEL-O-FIT, FLIP-TIP, and Apex, Apex Tool Group, LLC.



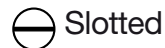
## Bits for all Screw Types



For all these fastening types:



Phillips®



Slotted



Torx®



Torx Plus®



Torx® Tamper Resistant



Torx Plus® Tamper Resistant



Pozidriv®



Sel-o-fit®



Quadrex®



Frearson



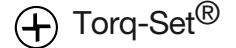
B.N.A.E.



Socket head



Square recess



Torq-Set®



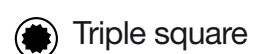
MorTorq®



Tri-Wing®



Hi-Torque®



Triple square

### Insert Bits (1/4" Hex) - metric

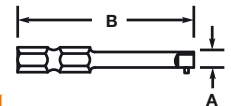
For internal hexagon and adjusting screws



Part Number	Size mm	Overall Length
		mm
185-1.5mm	1.5 mm	25
185-2mm	2 mm	25
185-2.5mm	2.5 mm	25
185-3mm	3 mm	25
185-4mm	4 mm	33
185-5mm	5 mm	33
185-6mm	6 mm	33
185-7mm	7 mm	32
185-8mm	8 mm	32
185-9mm	9 mm	32
185-10mm	10 mm	32

### Square Drive Adapter (1/4" hex)

For use with quick-change chuck and guide sleeve models, as far as not otherwise stated.



Model Number	"A" Sq. Dr.	"B"	Sleeve Number
		mm	
EX250-2	1/4	50.8	---
EX250-3	1/4	76.2	847295*
EX250-4	1/4	101.6	---
EX250-6	1/4	152.4	---
EX370	3/8	41.3	---
EX370-3	3/8	76.2	847295*
EX500-2	1/2	50.8	---
EX500-3	1/2	76.2	---

\*Necessary for guide sleeve models.

### Hex Extensions



Model Number	Hex (in.)	Type of Locking	Overall Length
			mm
Hex drive with 1/2" male square drive			
EX-501-3	7/16	Pin	76
EX-501-4	7/16	Pin	102
EX-501-6	7/16	Pin	152
Hex drive with 3/8" male square drive			
EX-371-3	7/16	Pin	76
EX-371-4	7/16	Pin	102
EX-371-6	7/16	Pin	152

### Hex Power Drive



Part Number	Part Number Magnetic	Size	Overall Length	Socket Diameter
		mm		
6N-08-8M-3	M6N-08-8M-3	8	76	12.7
6N-08-8M-4	M6N-08-8M-4*	8	102	12.7
6N-08-8M-6	M6N-08-8M-6	8	152	12.7
6N-08-10M-3*	M6N-08-10M-3*	10	76	14.3
6N-08-10M-4*	M6N-08-10M-4*	10	102	14.3
6N-08-10M-6	M6N-08-10M-6*	10	76	14.3
6N-08-12M-3	M6N-08-12M-3	12	76	19.0
6N-08-12M-4	M6N-08-12M-4	12	102	19.0
6N-08-12M-6	M6N-08-12M-6*	12	152	19.0

\*Marks a standard part that is either available in stock or that has a delivery time of approx. 4 - 6 weeks at the most. There is no minimum order quantity for these parts.

## Phillips Bits



### 1/4" Hex Insert Bits

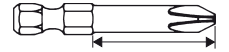


Part Number	Size	Overall Length	
		inch	mm
440-1X	1	1	25
440-115X	1	1 1/2	38
440-12X	1	2	51
440-125X	1	2 1/2	64
440-13X	1	3	76
440-2X	2	1	25
440-2I	2	1	25
440-215X	2	1 1/2	38
440-22X	2	2	51
440-225X	2	2 1/2	64
440-23X	2	3	76
440-24X	2	4	101
440-255X	2	5 1/2	140
440-26X	2	6	152
440-27X*	2	1	25
For screws not recessed enough			
440-3X	3	1	25
440-3I	3	1	25
440-3125X	3	1 1/4	32
440-3BNX	3	1 1/4	32
440-32X	3	2	51
440-325X	3	2 1/2	64
440-33X	3	3	76
440-34X	3	4	101
440-4X	4	1 5/16	33

Reinforced version



### 1/4" Hex Power Drive



Part Number	Size	Overall Length		Shank Diameter		Turned Length	
		inch	mm	inch	mm	inch	mm
4910X	0	1 15/16	49	1/8	3.2	1 1/4	32
4910-AX	0	2 3/4	70	1/8	3.2	2	51
4910-BX	0	3 1/2	89	1/8	3.2	2 3/4	70
4910-CX	0	6	152	1/8	3.2	2	51
491X	1	1 15/16	49	3/16	4.8	1 1/4	32
491-AX	1	2 3/4	70	3/16	4.8	2	51
491-BX	1	3 1/2	89	3/16	4.8	2 3/4	70
491-CX	1	6	152	3/16	4.8	2	51
491-CCX	1	6	152	3/16	4.8	5 1/4	133
492X	2	1 15/16	49	1/4	6.4	1 1/4	32
492I	2	1 15/16	49	1/4	6.4	1 1/4	32
492-AX	2	2 3/4	70	1/4	6.4	2	51
492-AI	2	2 3/4	70	1/4	6.4	2	51
492-BX	2	3 1/2	89	1/4	6.4	2 3/4	70
492-BI	2	3 1/2	89	1/4	6.4	2 3/4	70
492-CX	2	6	152	1/4	6.4	2	51
492-CI	2	6	152	1/4	6.4	2	51
492-200MM	2	7 13/16	200	1/4	6.4	7	178
SD-2052-8	2	8	203	9/32	7.1	7	178
SD-2052-10	2	10	254	9/32	7.1	9	229
492-CCX	2	6	152	1/4	6.4	5 1/4	133
492-27X*	2	1 15/16	49	1/4	6.4	1 1/4	32
492-A-27X*	2	2 3/4	70	1/4	6.4	2	51
492-B-27X*	2	3 1/2	89	1/4	6.4	2 3/4	70
492-C-27X*	2	6	152	1/4	6.4	2	51
492-CC-27X*	2	6	152	1/4	6.4	5 1/4	133
493X	3	1 15/16	49	5/16	7.9	1	25
493-AX	3	2 3/4	70	5/16	7.9	1 3/4	44
493-BX	3	3 1/2	89	5/16	7.9	2 1/2	64
493-CX	3	6	152	5/16	7.9	5	127
4930X	3	1 15/16	49	1/4	6.4	1 1/4	32
4930-AX	3	2 3/4	70	1/4	6.4	2	51
4930-BX	3	3 1/2	89	1/4	6.4	2 3/4	70
4930-CX	3	6	152	1/4	6.4	2	51
4930-CCX	3	6	152	1/4	6.4	5 1/4	133
494X	4	1 15/16	49	3/8	9.5	1	25

## Slotted Bits



### 1/4" Hex Insert Bits

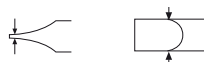


Part Number	Screw	Total Length		Blade Thickness		Blade Width	
		inch	mm	inch	mm	inch	mm
445-1X	4F-5R	1	25	.034	.86	3/16	4.8
445-2X	6F-8R	1	25	.040	1.02	7/32	5.6
445-3X	8F-10R	1	25	.042	1.07	1/4	6.4
445-4X	10F-12R	1	25	.046	1.17	9/32	7.1
445-1-15X	4F-5R	1 1/2	38	.034	.86	3/16	4.8
445-2-15X	6F-8R	1 1/2	38	.040	1.02	7/32	5.6
445-3-15X	8F-10R	1 1/2	38	.042	1.07	1/4	6.4
445-4-15X	10F-12R	1 1/2	38	.046	1.17	9/32	7.1
445-5X	12F-14R	1 1/2	38	.050	1.27	5/16	7.9
445-6X	14F-16R	1 1/2	38	.055	1.40	23/64	9.1

## Slotted Power Bits with Guide Sleeves



1/4" Hex Power Drive



Part No. Complete	Part Number	Screw Size	Length		Blade Thickness		Blade Width/Shank Dia.	
Assembly	Only Bit		inch	mm	inch	mm	inch	mm
L-320X	320-LX	5F-6R	3 3/4	95	.036	.91	.193	4.90
M-320X	320-MX	6F-8R	3 3/4	95	.038	.97	.241	6.12
P-320X	320-PX	8F-10R	3 3/4	95	.042	1.07	.290	7.37
R-320X	320-RX	10F-12R	3 3/4	95	.046	1.17	.350	8.89
S-320X	320-SX	12F-14R	3 7/8	98	.050	1.27	.395	10.03
T-320X	320-TX	14F-16R	4 1/8	105	.055	1.40	.457	11.61

## Triple Square Bits



1/4" Hex Power Drive



Part Number	Size	Overall Length	
		inch	mm
49-TSQ-4M	4mm	2	50
49-TSQ-5M	5mm	2	50
49-TSQ-6M	6mm	2	50
49-TSQ-8M	8mm	2	50
49-TSQ-10M	10mm	2	50
49-TSQ-12M	12mm	2	50

## Tri-Wing®



1/4" Hex Insert Bits



Part Number	Size	Size	Size	Overall Length	
		Tension Head	Shear Head	inch	mm
TWD-0	0	0-80	-	1	25
TWD-1	1	2-56	4-40	1	25
TWD-2	2	4-40	6-32	1	25
TWD-3	3	6-32	8-32	1	25
TWD-4	4	8-32	10-32	1	25
TWD-5	5	10-32	1/4-28	1	25
TWD-6	6	1/4	5/16	1	25
TWD-7	7	5/16	3/8	1	25

## Torx® Bits



1/4" Hex Power Drive

Part Number	Screw-driver Size	A	Shank Diameter		Overall Length	
			inch	mm	inch	mm
49-TX-05	T-5	.055	.119	3.0	1 15/16	49
49-A-TX-05	T-5	.055	.119	3.0	2 3/4	70
49-B-TX-05	T-5	.055	.119	3.0	3 1/2	89
49-TX-06	T-6	.065	.119	3.0	1 15/16	49
49-A-TX-06	T-6	.065	.119	3.0	2 3/4	70
49-TX-07	T-7	.077	.119	3.0	1 15/16	49
49-A-TX-07	T-7	.077	.119	3.0	2 3/4	70
49-B-TX-07	T-7	.077	.119	3.0	3 1/2	89
49-C-TX-07	T-7	.077	.119	3.0	6	152
49-TX-08	T-8	.090	.119	3.0	1 15/16	49
49-A-TX-08	T-8	.090	.119	3.0	2 3/4	70
49-B-TX-08	T-8	.090	.119	3.0	3 1/2	89
49-C-TX-08	T-8	.090	.119	3.0	6	152
49-TX-09	T-9	.097	.119	3.0	1 15/16	49
49-A-TX-09	T-9	.097	.119	3.0	2 3/4	70
49-B-TX-09	T-9	.097	.119	3.0	3 1/2	89
49-C-TX-09	T-9	.097	.119	3.0	6	152
49-TX-10	T-10	.107	.150	3.8	1 15/16	49
49-A-TX-10	T-10	.107	.150	3.8	2 3/4	70
SD-4693	T-10	.107	.150	3.8	3	75
49-B-TX-10	T-10	.107	.150	3.8	3 1/2	89
49-C-TX-10	T-10	.107	.150	3.8	6	152
49-TX-15	T-15	.128	.150	3.8	1 15/16	49
49-A-TX-15	T-15	.128	.150	3.8	2 3/4	70
49-B-TX-15	T-15	.128	.150	3.8	3 1/2	89
49-C-TX-15	T-15	.128	.150	3.8	6	152
49-TX-20	T-20	.151	.171	4.3	1 15/16	49
49-A-TX-20	T-20	.151	.171	4.3	2 3/4	70
49-B-TX-20	T-20	.151	.171	4.3	3 1/2	89
49-TX-20-5	T-20	.151	.171	4.3	5	127
49-C-TX-20	T-20	.151	.171	4.3	6	152
49-TX-25	T-25	.173	.193	4.9	1 15/16	49
49-A-TX-25	T-25	.173	.193	4.9	2 3/4	70
49-B-TX-25	T-25	.173	.193	4.9	3 1/2	89
49-C-TX-25	T-25	.173	.193	4.9	6	152
49-TX-27	T-27	.195	.215	5.5	1 15/16	49
49-A-TX-27	T-27	.195	.215	5.5	2 3/4	70
49-B-TX-27	T-27	.195	.215	5.5	3 1/2	89
49-C-TX-27	T-27	.195	.215	5.5	6	152
49-TX-30	T-30	.216	.236	6.0	1 15/16	49
49-A-TX-30	T-30	.216	.236	6.0	2 3/4	70
49-B-TX-30	T-30	.216	.236	6.0	3 1/2	89
49-C-TX-30	T-30	.216	.236	6.0	6	152
49-TX-40	T-40	.260	.309	7.8	1 15/16	49
49-A-TX-40	T-40	.260	.309	7.8	2 3/4	70
49-B-TX-40	T-40	.260	.309	7.8	3 1/2	89
49-C-TX-40	T-40	.260	.309	7.8	6	152

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### High Quality Product Protecting Fastening Tools are based on First Class Sockets.

Apex  $\mu$ -Guard™ forms a protective barrier between the genuine Apex fastening tools and the surface of your product. The free-spinning patented sleeve design offers maximum protection for polished and delicate surfaces.

Apex  $\mu$ -Guard™ comprise thermoplastic urethane (TPU elastomer) that softly captures side impacts and prevents expensive damage. They feature the lowest sustained coefficients of friction and maximum tool efficiency. The sleeve is not removable and prevents unauthorised removal.

With the Apex  $\mu$ -Guard™ system you receive the proven accuracy of fit and performance of Apex tools and, in addition, the best protection for your product against manufacturing-related damage available on the market. Apex  $\mu$ -Guard™ is your protection against damage due to friction caused by rotation.



Apex  $\mu$ -Guard™ – product protection.

#### Prevents Damage due to Side Impacts



#### Free Spinning Design



#### Practically Damage-Free



**$\mu$ -Guard Sockets**

(includes socket and sleeve)



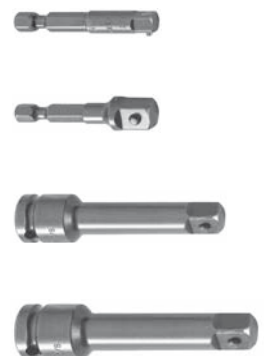
Part number	Socket	Drive End			Socket Length	Fastener End			Assembly Features*
		Size	Type	Sex		Size	Type	Sex	
UG-10MM21	10MM21	1/4	Square	F	Standard	10 mm	Hex	F	FS
UG-M-10MM21	M-10MM21	1/4	Square	F	Standard	10 mm	Hex	F	FS, M
UG-MB-10MM21	MB-10MM21	1/4	Square	F	Standard	10 mm	Hex	F	FS, M, B
UG-10MM13	10MM13	3/8	Square	F	Standard	10 mm	Hex	F	FS
UG-M-10MM13	M-10MM13	3/8	Square	F	Standard	10 mm	Hex	F	FS, M
UG-10MM23	10MM23	3/8	Square	F	Long	10 mm	Hex	F	FS
UG-M-10MM23	M-10MM23	3/8	Square	F	Long	10 mm	Hex	F	FS, M
UG-MB-10MM23	MB-10MM23	3/8	Square	F	Long	10 mm	Hex	F	FS, M, B
UG-13MM23	13MM23	3/8	Square	F	Long	13 mm	Hex	F	FS
UG-M-13MM23	M-13MM23	3/8	Square	F	Long	13 mm	Hex	F	FS, M
UG-MB-13MM23	MB-13MM23	3/8	Square	F	Long	13 mm	Hex	F	FS, M, B
UG-13MM25	13MM25	1/2	Square	F	Long	13 mm	Hex	F	FS
UG-SF-13MM25	SF-13MM25	1/2	Square	F	Long	13 mm	Hex	F	FS, SF
UG-15MM25	15MM25	1/2	Square	F	Long	15 mm	Hex	F	FS
UG-SF-15MM25	SF-15MM25	1/2	Square	F	Long	15 mm	Hex	F	FS, SF
UG-18MM25	18MM25	1/2	Square	F	Long	18 mm	Hex	F	FS
UG-SF-18MM25	SF-18MM25	1/2	Square	F	Long	18 mm	Hex	F	FS, SF

 **$\mu$ -Guard Extensions**

(includes extension and sleeve)



Model Number	Extension	Drive End			Extension Length	Fastening End			Features*
		Size	Type	Sex		Size	Type	Sex	
UG-EX-250-2	EX-250-2	1/4	Hex	M	2	1/4	Square	M	FS
UG-EX-250-4	EX-250-4	1/4	Hex	M	4	1/4	Square	M	FS
UG-EX-250-6	EX-250-6	1/4	Hex	M	6	1/4	Square	M	FS
UG-EX-370-2	EX-370-2	1/4	Hex	M	2	3/8	Square	M	FS
UG-EX-370-4	EX-370-4	1/4	Hex	M	4	3/8	Square	M	FS
UG-EX-370-6	EX-370-6	1/4	Hex	M	6	3/8	Square	M	FS
UG-EX-376-3	EX-376-3	3/8	Square	F	3	3/8	Square	M	FS
UG-EX-376-6	EX-376-6	3/8	Square	F	6	3/8	Square	M	FS
UG-EX-376-12	EX-376-12	3/8	Square	F	12	3/8	Square	M	FS
UG-EX-508-4	EX-508-4	1/2	Square	F	4	1/2	Square	M	FS
UG-EX-508-8	EX-508-8	1/2	Square	F	8	1/2	Square	M	FS
UG-EX-508-12	EX-508-12	1/2	Square	F	12	1/2	Square	M	FS

 **$\mu$ -Guard Bit Holders**

(includes bit holder and sleeve)



Model Number	Bit Holder	Drive End			Bit Holder Length	Fastening End			Features*
		Size	Type	Sex		Size	Type	Sex	
UG-M-490	M-490	1/4	Hex	M	2 31/32	1/4	Hex	F	FS, M, ET
UG-M-490-2	M-490-2	1/4	Hex	M	2	1/4	Hex	F	FS, M, ET
UG-838	838	3/8	Square	F	1 1/2	1/4	Hex	F	FS, ET
UG-M-838	M-838	3/8	Square	F	2 5/8	1/4	Hex	F	FS, M, ET
UG-835	835	3/8	Square	F	1 1/2	5/16	Hex	F	FS, ET
UG-M-835	M-835	3/8	Square	F	2 3/4	5/16	Hex	F	FS, M, ET
UG-855	855	1/2	Square	F	1 1/2	5/16	Hex	F	FS, ET
UG-M-855	M-855	1/2	Square	F	2 3/4	5/16	Hex	F	FS, M, ET
UG-QR-308	QR-308	3/8	Square	F	1 3/4	1/4	Hex	F	FS, QR
UG-QR-508	QR-508	1/2	Square	F	2 1/8	1/4	Hex	F	FS, QR
UG-QR-314	QR-314	3/8	Square	F	2	7/16	Hex	F	FS, QR
UG-QR-514	QR-514	1/2	Square	F	2 1/8	7/16	Hex	F	FS, QR

**\*Features**

- FS** Free Spinning Tool rotates independent of sleeve.
- M** Magnetic Tool is equipped with magnet that keeps the fastener in position during tightening.
- B** Bolt Clearance Tool is sprung so that bolts or nuts can withdraw into the socket.
- SF** Surface Drive Tool has special hex shape so that bolts and nuts are easier to insert.
- ET** Extended Tip Sleeve protrudes beyond the end of the bit holder and protects most of the standard insert.\*\* The tip of the insert bit is free and in this way guarantees a better connection.

**QR Quick Release**

Tool has a clamping device so that bits can be changed quickly and easily. The sleeve does not protrude beyond the end of the bit holder.

\*\*Bit holder sleeves can be used with 1 inch/25 mm or 1 1/4 inch/32 mm long inserts. Tips of the sleeve can be changed to suit the requirements or as required. Sleeves can be cut to the required length or heated and adapted to the shape of the bolt head.

**NOTES:** Lengths stated apply for core length without sleeves. If not otherwise stated, the sleeve can protrude up to 2 mm beyond the end of the tool.

**You cannot find the tool you need? Contact your Apex distributor, our customer service or refer to our web site [www.apexpowertools.eu](http://www.apexpowertools.eu). In the majority of cases we can supply the item required as a special item. If necessary our team of experts will develop and produce specials to suit your requirements.**

# Apex Sockets & Universal Joints



## ■ Sockets

Apex sockets are the industry standard (black version). Available as standard, long, extra long, thin wall in the versions hex, double hex, square, double square, surface drive, fast lead, with fixed or spring-mounted magnet, Torx and various special versions.



## ■ Magnetic Sockets

On tightening conventional or hardened bolts, magnetic sockets ease the access to inaccessible areas. They are often also used in automation. Magnetic sockets start with "M" before the item number.



## ■ Sockets with Spring-Mounted Magnet

"MB" (Magnetic Bolt) sockets for tightening nuts on threaded studs. On tightening the spring-mounted magnet is compressed by the threaded stud and permits entry into the socket. These tools are also available in the "SM" (Magnetic Sleeve) version. The advantage of these tools is that the spring-mounted magnet is replaced by a magnetic sleeve and the threaded stud can enter all the way to the square drive. Magnetic bolt and sleeve magnet sockets start with "MB" or "SM" respectively before the item number. Also available as surface drive on request.



## ■ Surface Drive Sockets

This profile was developed for usage on spindle-operated machines. The large intermediate spaces permit flowing, fast fitting to nuts and screws; during this process the flats on the nut / screw come into contact with the surfaces of the round profiles. In this way the corners of the nuts / screws move freely in the spaces between the round profiles. These tools are only of limited use for impact tools. Surface drive sockets start with "SF" before the item number. Magnetic version on request.



## ■ Fast Lead Sockets

The chamfered edges on this socket permit quick fitting; unlike SF sockets in this case a fixed connection is made already on fitting. This special feature permits quick insertion of a hex. Fitting is therefore possible without shutting down the source of power. Fast lead sockets start with "FL" before the item number. Magnetic version on request.



## ■ Special Sockets

We supply spline, thread cutter holder and other sockets for your special application on request.



## ■ Extensions, Adapters and Joints

Apex supplies the necessary accessories to adapt sockets to just about every tool and every application.



## Universal Joint Adapters,

with 3/8" square drive, extension,  
male square to female square



Standard version shown

Part Number Standard	Part Number Ten- sion Type	Male Square in.	Female Square in.	Type of Locking	Largest Diameter mm
KAM-37-3*	KDM-37-3*	3/8	3/8	Pin	19
---	KDM-37-6*	3/8	3/8	Pin	19
---	KDM-37-B-3	3/8	3/8	Ball	19
KAM-38-6*	KDM-38-6*	3/8	3/8	Pin	22

Standard lengths are 3", 6", 9" and 12" (76, 152, 229 and 305 mm)

\*Marks a standard part that is either available in stock or that has a delivery time of approx. 4 - 6 weeks at the most. There is no minimum order quantity for these parts.

## Universal Joints\*\*, Metric

with 3/8" drive, extension, hex,  
standard and with tension type



Part Number Standard	Part Number Tension Type	Across Flats Width	Shank Length	Socket Length	Diam. Socket	Diam. Socket End	Across Flats Depth
		mm	A	B	C	D	E
KA-6-10m-4*	---	10	102	20.6	19.1	15.1	9.5
KA-6-10m-6*	KD-6-10m-6*	10	152	20.6	19.1	15.1	9.5
KA-6-10m-9*	KD-6-10m-9*	10	229	20.6	19.1	15.1	9.5
---	KD-6-10m-12*	10	305	20.6	19.1	15.1	9.5
---	KD-7-11m-6	11	152	23.8	22.2	15.9	10.3
KA-7-11m-12	KD-7-11m-12	11	305	23.8	22.2	15.9	10.3
KA-7-12m-4*	---	12	102	23.8	22.2	17.5	10.3
KA-7-12m-6*	KD-7-12m-6*	12	152	23.8	22.2	17.5	10.3
KA-7-12m-9*	KD-7-12m-9*	12	229	23.8	22.2	17.5	10.3
KA-7-12m-12	KD-7-12m-12*	12	305	23.8	22.2	17.5	10.3
KA-7-13m-3*	---	13	76	25.4	22.2	17.5	11.9
KA-7-13m-4*	---	13	102	25.4	22.2	17.5	11.9
KA-7-13m-6*	KD-7-13m-6*	13	152	25.4	22.2	17.5	11.9
KA-7-13m-9*	KD-7-13m-9*	13	229	25.4	22.2	17.5	11.9
KA-7-13m-12*	KD-7-13m-12*	13	305	25.4	22.2	17.5	11.9
KA-7-14m-6*	KD-7-14m-6*	14	152	27.0	22.2	19.1	13.5
---	KD-7-14m-9*	14	229	27.0	22.2	19.1	13.5
KA-8-15m-3*	---	15	76	28.6	25.4	19.8	14.3
---	KD-8-15m-6*	15	152	28.6	25.4	19.8	14.3
KA-8-15m-9*	KD-8-15m-9*	15	229	28.6	25.4	19.8	14.3
KA-8-15m-12*	KD-8-15m-12*	15	305	28.6	25.4	19.8	14.3

\*\*Universal joints are not allowed to be used with impact or pulsing tools. The maximum operating angle is 30°.

+ Thin wall.

## Sockets, Metric

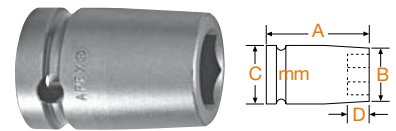
with 3/8" square drive, magnetic,  
thin wall, standard length



Part Number Fixed Magnet	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
	mm	A	B	C	D
M-8mm43*	8	31.7	12.7	19.1	4.8
M-10mm43*	10	31.7	15.1	19.1	6.4
M-11mm43	11	38.1	15.9	19.1	7.2
M-12mm43*	12	38.1	17.5	19.1	7.2
M-13mm43*	13	38.1	19.1	19.1	8.7
M-14mm43	14	38.1	19.8	20.6	11.1
M-15mm43*	15	38.1	20.5	20.6	11.1

## Sockets, Metric

with 3/4" square drive, hex, standard length

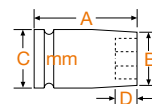


Part Number Hex	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
	mm	A	B	C	D
17mm17*	17	51	31.8	38.1	11.2
18mm17*	18	51	31.8	38.1	11.2
19mm17*	19	51	31.8	38.1	11.9
20mm17*	20	51	33.3	38.1	11.9
21mm17*	21	51	34.9	38.1	13.5
22mm17	22	51	38.1	38.1	14.3
22mm47*+	22	51	33.3	34.9	14.3
24mm17*	24	51	38.1	38.1	15.9
24mm47*+	24	51	34.9	34.9	15.9
26mm17*	26	51	41.3	41.3	15.9
27mm17	27	51	44.4	44.4	17.5
27mm47+	27	51	38.1	38.1	17.5
29mm17*	29	54	47.6	44.4	19.1
30mm17*	30	54	47.6	44.4	19.1
30mm47+	30	54	41.3	41.3	19.1
32mm17	32	54	50.8	44.4	20.6
32mm47+	32	54	44.4	44.4	20.6
33mm17*	33	54	50.8	44.4	20.6
36mm17	36	57	57.1	54.0	23.8
37mm17	37	57	57.1	54.0	23.8
41mm17	41	57	63.5	54.0	31.8
46mm17*	46	57	69.9	54.0	31.8

# Apex Sockets

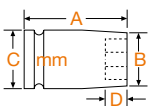
**Sockets, Metric,** with 1/2" square drive, hex and double hex, standard length

Part Number Hex	Part No. Double Square	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
		mm	A	B	C	D
10mm15*	10mm15-D*	10	38.1	16.7	23.8	6.4
11mm15*	11mm15-D	11	38.1	17.5	23.8	7.2
12mm15*	12mm15-D*	12	38.1	19.1	23.8	7.2
13mm15*	13mm15-D*	13	38.1	22.2	23.8	8.7
14mm15*	14mm15-D*	14	38.1	22.2	23.8	11.1
15mm15*	15mm15-D*	15	38.1	23.8	23.8	11.1
16mm15*	16mm15-D*	16	38.1	25.4	25.4	11.1
17mm15*	17mm15-D*	17	38.1	28.6	28.6	11.1
18mm15*	18mm15-D*	18	38.1	28.6	28.6	11.1
19mm15*	19mm15-D*	19	38.1	28.6	28.6	11.9
20mm15*	---	20	38.1	31.7	31.7	11.9
21mm15*	21mm15-D*	21	38.1	31.7	31.7	13.5
22mm15*	22mm15-D	22	38.1	33.3	33.3	14.3
23mm15*	23mm15-D	23	38.1	34.9	34.9	15.9
24mm15*	24mm15-D*	24	38.1	34.9	34.9	15.9
25mm15*	---	25	38.1	38.1	38.1	15.9
26mm15	26mm15-D	26	38.1	38.1	38.1	15.9
27mm15*	27mm15-D	27	41.3	41.3	41.3	17.5
28mm15	---	28	41.3	41.3	41.3	19.1
29mm15	29mm15-D	29	41.3	44.4	44.4	19.1
30mm15	30mm15-D	30	41.3	44.4	44.4	19.1
32mm15	32mm15-D	32	44.4	44.4	44.4	20.6
33mm15	---	33	44.4	47.6	47.6	20.6
34mm15	---	34	47.6	47.5	47.5	20.5
35mm15	---	35	47.6	50.8	50.8	20.6
36mm15	---	36	47.6	50.8	50.8	23.8



**Sockets, Metric,** with 1/4" square drive, standard length, hex and double hex

Part Number Hex	Part Number Double Hex	Across Flats Width	Overall Length	Diameter Socket End	Diameter Drive End	Across Flats Depth
		in.	A	B	C	D
3.5mm11	---	3.5	22.2	6.4	12.7	2.4
4mm11*	---	4	22.2	6.4	12.7	2.4
4.5mm11	---	4.5	22.2	7.9	12.7	2.4
5mm11*	---	5	22.2	8.7	12.7	3.9
5.5mm11*	---	5.5	22.2	9.5	12.7	3.9
6mm11*	6mm11-D	6	22.2	9.5	12.7	3.9
7mm11*	7mm11-D*	7	22.2	11.1	12.7	4.8
8mm11*	8mm11-D*	8	25.4	12.7	12.7	4.8
9mm11*	9mm11-D	9	25.4	14.3	14.3	4.8
10mm11*	10mm11-D*	10	25.4	15.9	15.9	6.4
OS-10mm11*	---	10	25.4	14.3	14.3	6.4
11mm11*	11mm11-D	11	25.4	15.9	15.9	7.2
12mm11*	12mm11-D	12	25.4	17.5	17.5	7.2
13mm11*	13mm11-D	13	25.4	19.1	19.1	8.7
14mm11*	14mm11-D	14	25.4	20.6	20.6	11.1
15mm11*	---	15	25.4	22.2	22.2	11.1
16mm11*	---	16	25.4	22.2	22.2	11.1



## Request Form for Screwdriver Bits















For information only – not an order

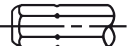



FIRST NAME \_\_\_\_\_ NAME/TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_ POSTCODE \_\_\_\_\_ CITY \_\_\_\_\_

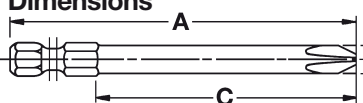
E-MAIL \_\_\_\_\_ TELEPHONE \_\_\_\_\_ FAX \_\_\_\_\_

Type	Bit Size	Type	Bit Size	Type	Bit Size	Type	Bit Size
<input type="checkbox"/> Phillips	 _____	<input type="checkbox"/> Torx®	 _____	<input type="checkbox"/> Frearson/Reed Prince	 _____	<input type="checkbox"/> Torx-Set®	 _____
<input type="checkbox"/> Phillips ACR®	 _____	<input type="checkbox"/> Torx Plus®	 _____	<input type="checkbox"/> Hex socket	 _____	<input type="checkbox"/> Triple Square	 _____
<input type="checkbox"/> Slotted	 _____	<input type="checkbox"/> Pozidriv®	 _____	<input type="checkbox"/> Square/Robertson	 _____	<input type="checkbox"/> Tri-Wing	 _____
						<input type="checkbox"/> Other	_____

Drive Type	Size
<input type="checkbox"/> Hex Insert	 _____
<input type="checkbox"/> Hex Power	 _____
<input type="checkbox"/> Thread	 _____
<input type="checkbox"/> Square Female	 _____
<input type="checkbox"/> Other	_____

### Requirements on the Nylon Sleeve

Components to be enclosed	Features of the Sleeve
<input type="checkbox"/> Only bit	<input type="checkbox"/> Flush with the tip of the bit
<input type="checkbox"/> Bit and bit holder	<input type="checkbox"/> Tip of the bit clear
	<input type="checkbox"/> Retractable
	<input type="checkbox"/> Magnets incorporated
	<input type="checkbox"/> Pressed on
	<input type="checkbox"/> Free spinning (independent of the part enclosed)
	<input type="checkbox"/> Limitation on the outside diameter (must be stated) _____
	<input type="checkbox"/> Other information (must be provided) _____

**Dimensions**  


**A.** Overall length \_\_\_\_\_

**B.** Body diameter \_\_\_\_\_

**C.** Length \_\_\_\_\_

### Bit Holder Versions for Hex Inserts

Bit Holder Drive Types	Size
<input type="checkbox"/> Magnetised	
<input type="checkbox"/> Securing O-ring	
<input type="checkbox"/> Standard (retaining groove)	
<input type="checkbox"/> Quick coupling	
<input type="checkbox"/> Other _____	
<input type="checkbox"/> Hex drive	_____
<input type="checkbox"/> Square female	_____
<input type="checkbox"/> Other _____	

Quantity \_\_\_\_\_

Torque applied or driving torque \_\_\_\_\_

Additional information \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Request Form for Sockets

For information only – not an order



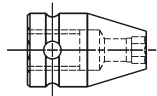
FIRST NAME \_\_\_\_\_ NAME/TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

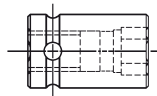
STREET \_\_\_\_\_ POSTCODE \_\_\_\_\_ CITY \_\_\_\_\_

E-MAIL \_\_\_\_\_ TELEPHONE \_\_\_\_\_ FAX \_\_\_\_\_

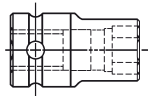
### Socket Type



☐ Type A (conical)



☐ Type B (cylindrical)



☐ Type C (shoulder)

### Broach Opening



☐ Hex



☐ Double square



☐ Torx®



☐ Double hex



☐ Fast lead

☐ Other



☐ Square



☐ Surface drive

### Magnetised

☐ Magnetic bolt clearance (MB)

☐ Magnetic bolt clearance (MB)

as well as retaining ring (RMB)

☐ Annular magnet (SM)

☐ Fixed magnet (M)

☐ Not magnetic

### Drive

☐ In acc. with DIN

☐ No DIN grooves

☐ Cross bore (only one wall)

### Extensions

☐ Hex drive

☐ Square female

☐ Other

### Size

\_\_\_\_\_

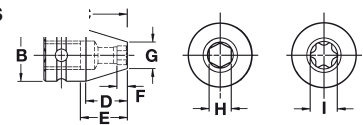
\_\_\_\_\_

\_\_\_\_\_

### Length of the Extension

☐ No extension  
required

### Dimensions



A. Square drive

\_\_\_\_\_

B. Diameter of drive end

\_\_\_\_\_

C. Overall length

\_\_\_\_\_

D. Length of taper or shoulder

\_\_\_\_\_

E. Bolt clearance depth

\_\_\_\_\_

F. Broach depth

\_\_\_\_\_

G. Diameter of tip

\_\_\_\_\_

H. Broach opening

\_\_\_\_\_

I. Torx® size



\_\_\_\_\_

Quantity \_\_\_\_\_

Additional information \_\_\_\_\_

Torque applied or  
driving torque

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Request Form for Universal Joints\*

For information only – not an order



FIRST NAME \_\_\_\_\_ NAME/TITLE \_\_\_\_\_

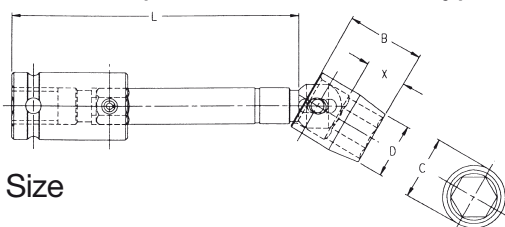
COMPANY \_\_\_\_\_

STREET \_\_\_\_\_ POSTCODE \_\_\_\_\_ CITY \_\_\_\_\_

E-MAIL \_\_\_\_\_ TELEPHONE \_\_\_\_\_ FAX \_\_\_\_\_

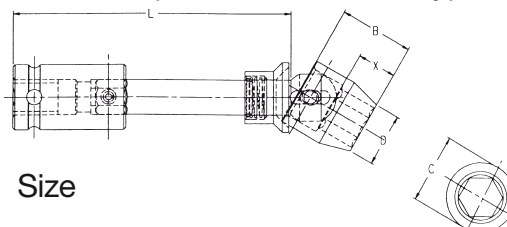
### Dimensions

☐ Female square drive, standard type



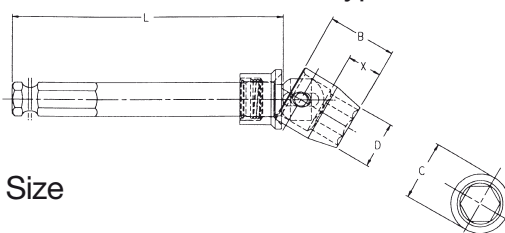
Size \_\_\_\_\_

☐ Female square drive, tension type



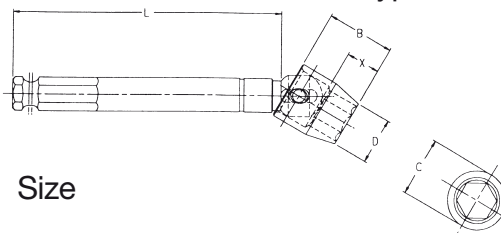
Size \_\_\_\_\_

☐ Male hex drive, tension type



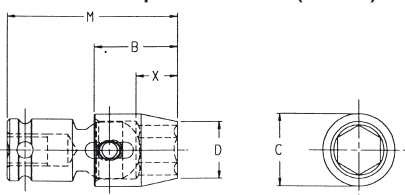
Size \_\_\_\_\_

☐ Male hex drive, standard type



Size \_\_\_\_\_

☐ Female square drive (short)



Size \_\_\_\_\_

B. Socket length \_\_\_\_\_ C. Joint diameter\* \_\_\_\_\_

D. Socket diameter \_\_\_\_\_ G. Clearance for threaded bolt \_\_\_\_\_

L. Shank length \_\_\_\_\_ M. Overall length \_\_\_\_\_

\*Standard diameter: 5/8", 3/4", 7/8", 1", 1 1/4", 1 1/2", 1 3/4", 2"

\*Universal joints are not suitable for usage in combination with impact wrenches. Maximum angle in use 30°.

### Board Opening Shape and Size

☐ Hex \_\_\_\_\_ ☐ Double hex \_\_\_\_\_ Quantity \_\_\_\_\_

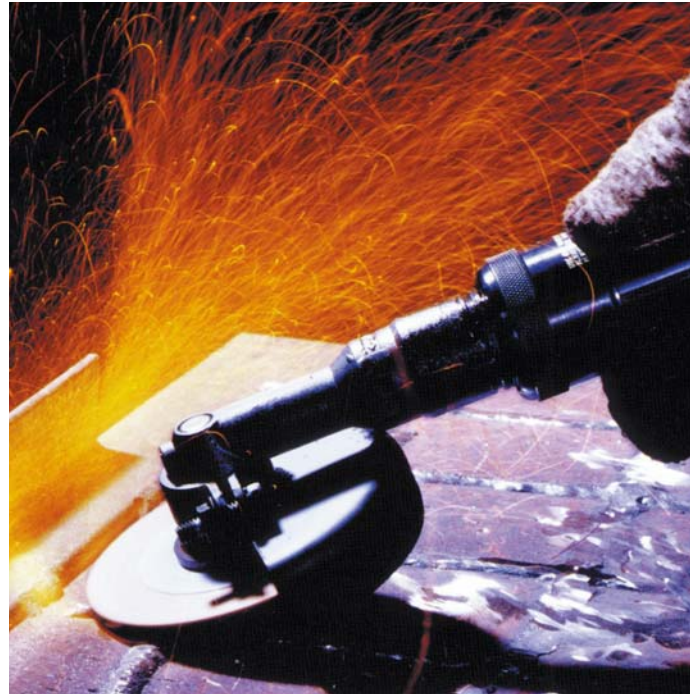
☐ Male square { ☐ Ball locking ☐ Pin locking ☐ Through bore \_\_\_\_\_ Torque to be transmitted \_\_\_\_\_

### Additional specifications

### Performance, Versatility & Quality

If precise finishing work (such as grinding or de-burring) is required, no tool is more suitable than the Dotco® grinder. Dotco's reputation in relation to performance, reliability and versatility is among the best in precision manufacturing. This reputation is the result of years of continuous improvements to the technical design and in production.

Dotco grinders are designed for the user. They are small, light and handy - without the need to compromise on performance. They are also elastomer-coated and comprise perfectly balanced parts so that vibration can be reduced to a minimum. Thanks to the optimal combination of tool characteristics, the user can concentrate on the achieving the best result in the shortest possible time.



### Robust Tools for Demanding Jobs

Dotco® grinders meet the demanding requirements in various sectors including shipbuilding, tube manufacture, in the production of transport equipment and in welding applications. As in general a large amount of material is removed in these applications, Dotco grinders have motors with high speeds and powers.

To ensure absolute robustness, only high quality precision components are used for Dotco grinders. The motors are protected by aluminium or steel housings.





## Grinding Attachments – Overview

### Precision Grinders, Carbide Burs and Wheel Grinders

For finishing work during which a high level of robustness is required.



### Attachments in Conical and Plug Form

For general grinding work on soft unalloyed steel, stainless steel, metal alloys and cast steel.

Applications include:

- Grinding and smoothing fillets, corners
- Beveling edges prior to welding
- Internal grinding work
- Gentle contours/curves
- General grinding work in confined spaces



### Type 1 Wheels

For use with portable tools with horizontal shafts.

Applications include:

- Notch-free grinding
- Smoothing weld seams
- Removing seam lines on castings
- Cleaning prior to welding
- Grinding concrete or masonry products



### Type 1 Cut-Off Wheels

Applications include cutting carbon and stainless steel, ferrous metals and cast iron

### Type 6 and 11 Cup Grinding Wheels

For use with right angle tools and tools with vertical shafts.

- Type 6 – Cup grinding wheels (straight)
- Type 11 – Cup grinding wheels (conical)



### Depressed Centre Grinding Wheels of Type 27/28

■ Type 27 wheels are used at an angle between 30° and 45° in relation to the work piece. These wheels are not suitable for flat grinding.

■ Type 28 wheels have a shape similar to a saucer and have contours that ensure the correct grinding angle. For this reason type 28 wheels are suitable for flat contact with the work piece.



## Dotco Precision Grinders



**50000 – 100000 rpm**

44 Watt – 74 Watt

- Different configurations for all your applications
- Ideal for precision de-burring and metal removal
- Turbines and models with and without speed control available
- 12-03 gearless right angle model for reduced maintenance and downtime

### Grinder Kits

**220G-600-C2-K** includes grinder, hose, collet chuck, chuck wrench, cylindrical plain burr (413680), cylindrical radius end burr (413681), cone and taper burr (413682) as well as tree point burr (413683) and carrying case.

**14G-830** includes grinder, hose, collet chuck, chuck wrench, two wrenches – 1006626, three grinding wheels – 1005327, 1005338, 1005344, dressing stone – 1004908, hose assembly – 1021393, carrying case – 1021743, filter-lubricator – 1020888.



14G-830-Kit



15Z-720 Kit

### Air Marking Pen Series 15Z

- Piston motor with 44 Watt
- Throttle with sliding sleeve
- Stylus with carbide tip
- Excellently suited for marking different materials – from aluminium to titanium.
- Weight 113g



15z-710

Model Number	Speed rpm	Weight kg	Length mm	Diameter mm
15Z-710	20000	0.1	140	15

Air inlet tube: 1/8" NPT – use hoses with 3/16" (4.7 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT: Stylus with carbide tip

OPTIONAL: Replacement stylus with carbide tip - 1018081

Air marking pen kit 15Z-720: 15Z-710 air marking pen, 1.5 m long air hose, 3/16" inside diameter with 1/8" NPT fittings, two 1/2" wrenches, carrying case

Model Number			Speed	Abrasive Capacity	Type Housing	Weight	Length	Chuck Size	Air Inlet Tube NPT
With Wheel Guard	Without Wheel Guard	Wrenchless Chuck	rpm			kg	mm		
Series 10-90 - (44 Watt) - front exhaust - turbine***									
	10R9000-03		100000	3/16" carbide bur, 3/16" diamond pin	A	0.2	137	3 mm	1/8"
	10R9000-08		100000	3/16" diamond pin	A	0.2	137	1/8"	1/8"
Series 10-95 - (74 Watt) - front exhaust - turbine***									
	10L9500-36		80000	1/4" carbide bur, 3/16" diamond pin	A	0.9	147	1/8"	1/4"
Series 12R91 without exhaust hose - (74 Watt) - speed control - rear exhaust - turbine***									
	12R9180-03*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	3 mm	1/8"
	12R9180-08*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	1/8"	1/8"
Series 12R91 with 1.2 m exhaust hose - (74 Watt) - speed control - rear exhaust - turbine***									
	12R9180-43*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	3 mm	1/8"
	12R9180-48*		65000**	1/8" carbide bur, 1/8" diamond pin	C	0.2	147	1/8"	1/8"
Series 12-03 - (74 Watt) gearless, right angle - rear exhaust									
	12R0380-13*		80000	1/4" carbide bur, 1/4" diamond pin	C	0.1	140	3 mm	1/8"
	12R0380-18		80000	1/4" carbide bur, 1/4" diamond pin	C	0.1	140	1/8"	1/8"
Series 10-04 - (74 Watt) - rear exhaust									
10R0401-13*	10R0400-13*		60000	1/4" carbide bur, 1/4" diamond pin	A	0.1	147*	3 mm	1/8"
10R0401-18*	10R0400-18	10R0412-18	60000	1/4" carbide bur, 1/4" diamond pin	A	0.1	147*	1/8"	1/8"
Series 12-04 - (74 Watt) - rear exhaust									
12R0410-13*	12R0400-13*		60000	1/4" carbide bur, 1/4" diamond pin	C	0.1	147	3 mm	1/8"
12R0410-18*	12R0400-18*		60000	1/4" carbide bur, 1/4" diamond pin	C	0.1	147	1/8"	1/8"

Housing identifier: A = Aluminium, C = Composite, S = Steel

The wrenchless chuck models 10R0412 are 0.4" (10 mm) longer.

\*Additional exhaust hose lengths are available, but not as Rapid Select.

\*\*With speed control.

#### ATTENTION:

Use oil-free, clean, dry air at max. 6.2 bar. Never oil turbine grinders. Failure to observe this point will degrade the service life and the operation of the turbine tools. Do not fasten quick disconnect coupling directly to the tool.

#### GENERAL:

Minimum hose size 3/16" (4.8 mm)

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Series 10-90: Corresponding collet chuck, chuck wrench, 2.1 m long air hose, replaceable cartridge filter in the hose.

Series 10-95: Corresponding collet chuck, chuck wrench, 2.4 m long air hose, integrated air filter, speed regulator.

Series 12R91: Corresponding collet chuck, chuck wrench, guard, 1.5 m long air hose.

Series 12-03, 10-04 & 12-04: Corresponding collet chuck, chuck wrench, guard, 1.5 m long air hose, 0.3 m long outer hose.

#### OPTIONAL:

Chucks: See catalogue SP-102

Guard (series 10-90): See catalogue SP-102

Cartridge filter in hose: 45-0211

Exhaust hose: See catalogue SP-102



## Dotco Inline Grinders



**12000 – 40000 rpm**

**150 Watt – 670 Watt**

- Housing made of aluminium, composite or robust steel
- Comprehensive range of different speeds
- Models with front, side and rear exhaust available



Model Number			Speed	Abrasive Capacity	Type (Housing)	Weight	Length	Clamping Range mm***	Air Inlet NPT
Front Exhaust	Side Exhaust	Rear Exhaust	rpm			kg	mm		
Series 12-05 - (150 Watt) - with guard									
12R0500-36			40000	1/4" carbide bur	C	0.3	150	5.6 - 6.4	1/8"
Series 12-10 - (220 Watt) - chuck series 300									
12L1001-36			34000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
12L1000-36			30000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
12L1003-36●			25000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
12S1008-36●			20000	1/2" carbide bur, 1" grinding wheel	C	0.4	152	5.6 - 6.4	1/4"
Series 10-10 - (220 Watt) - chuck series 300									
10L1001-36▲			34000	1/2" carbide bur, 1" grinding wheel	A	0.3	117	5.6 - 6.4	1/4"
10L1000-36▲			30000	1/2" carbide bur, 1" grinding wheel	A	0.3	117	5.6 - 6.4	1/4"
10L1003-36●			25000	1/2" carbide bur, 1" grinding wheel	A	0.3	117	5.6 - 6.4	1/4"
Series 12-20 - (450 Watt) - chuck series 200									
12L2000-01			25000	3/4" carbide bur, 1 1/2" grinding wheel	C	0.6	175	5.6 - 6.4	1/4"
12L2001-01●			20000	3/4" carbide bur, 1 1/2" grinding wheel	C	0.6	175	5.6 - 6.4	1/4"
12L2002-01●			18000	3/4" carbide bur, 1 1/2" grinding wheel	C	0.6	175	5.6 - 6.4	1/4"
Series 10-20 - (450 Watt) - chuck series 200									
10L2000-01 ▲			25000	3/4" carbide bur, 1 1/2" grinding wheel	A	0.6	147	5.6 - 6.4	1/4"
Series 12-25 - (670 Watt) - chuck series 200									
12L2500-01			23000	1" carbide bur, 1 1/2" grinding wheel	C	0.8	185	5.6 - 6.4	1/4"
12L2502-01●			18000	1" carbide bur, 1 1/2" grinding wheel	C	0.8	185	5.6 - 6.4	1/4"
12L2562-01●			12000*	1" carbide bur, 1 1/2" grinding wheel	C	0.8	188	5.6 - 6.4	1/4"
Series 10-25 - (670 Watt) - chuck series 200									
10L2500-01			23000	1" carbide bur, 1 1/2 grinding wheel	A	0.6	159	5.6 - 6.4	1/4"
10B2500-01			23000	1" carbide bur, 1 1/2 grinding wheel	A	0.6	159	5.6 - 6.4	1/4"
10L2502-01●			18000	1" carbide bur, 1 1/2 grinding wheel	A	0.6	159	5.6 - 6.4	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

▲ Trigger start available

• Low oil blades



+ Model with exhaust hose available

\*With speed control; with front exhaust 0.7" (18 mm) longer.

\*\*Series 31G models with rear exhaust 0.6" (18 mm) longer.

\*\*\*Also available in 6 mm.

Mounting capacity for grinding wheels depends on wheel diameter, thickness and overhang. You can obtain speed recommendations from the wheel manufacturer.

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter:

Series 12-05: 3/16" (4.8 mm)

Series 10-10, 12-10, 116: 1/4" (6.4 mm)

Series 10-20, 10-25, 12-20, 12-25, 136, 31G: 5/16" (7.9 mm)

#### STANDARD EQUIPMENT:

Series 12-05:

Corresponding collet chuck, chuck wrench, guard, 2.1 m long air hose.

Series 12-10, 12-20, 12-25, 10-10, 10-20, 10-25, 116, 136, 31G:

Corresponding collet chuck, chuck wrench

#### OPTIONAL:

Additional accessories: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102



12-05



12-20

## Dotco Inline Extended Grinders



**18000 – 28 000 rpm**

220 Watt – 670 Watt

- Extended housing
- Housing made of aluminium, composite or robust steel

Model Number			Speed	Abrasive Capacity	Type (Housing)	Weight	Length	Clamping Range mm**	Air Inlet NPT
Front Exhaust	Side Exhaust	Rear Exhaust	rpm			kg	mm		
Series 12-11 - (220 Watt) - 3" (76 mm) extension - chuck series 300									
12L1101-36		12L1181-36	28000	1/2" carbide bur, 1" grinding wheel	C	0.6	277	5.6 - 6.4	1/4"
12L1112-36●			25000	1/2" carbide bur, 1" grinding wheel	C	0.6	277	5.6 - 6.4	1/4"
Series 10-11 - (220 Watt) - 5" (127 mm) extension - chuck series 300									
10L1101-36		10L1181-36	28000	1/2" carbide bur, 1" grinding wheel	A	0.5	248	5.6 - 6.4	1/4"
10L1112-36▲			25000	1/2" carbide bur, 1" grinding wheel	A	0.5	248	5.6 - 6.4	1/4"
Series 12-26 - (670 Watt) - 5" (127 mm) extension - chuck series 200									
	12L2600-01		22000	1" carbide bur, 1 1/2" grinding wheel	C	1.3	328	5.6 - 6.4	1/4"
		12L2682-01●	18000	1" carbide bur, 1 1/2" grinding wheel	C	1.3	328	5.6 - 6.4	1/4"
Series 12-26 - (670 Watt) - multiple extensions - chuck series 300									
		12S2674-2A●	18000	3/4" carbide bur, 1 1/2" grinding wheel	C	1.9	597	5.6 - 6.4	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

▲ Trigger start available

\*With speed control

\*\*Also available in 6 mm.

● Low oil blades



Mounting capacity for grinding wheels depends on wheel diameter, thickness and overhang. You can obtain speed recommendations from the wheel manufacturer.

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter:

Series 10-11, 12-11: 1/4" (4.8 mm)

Series 12-26, 136: 5/16" (7.9 mm)

Series 15 (speed control): 3/8" (9.5 mm)

#### STANDARD EQUIPMENT:

Corresponding collet chuck, chuck wrench

#### OPTIONAL:

Additional accessories: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102

#### MULTIPLE EXTENSIONS FOR SERIES 12-26:

Each extension changes the total length and the weight of the tool as follows:

Series 12-26 = 7.25" (184 mm) and 1.2 lbs. (0.54 kg).

The length and weight information in the table apply for model 2A.

1A = One extension

2A = Two extensions

3A = Three extensions etc.

Extensions are not available for all speeds.



## Dotco Right Angle Grinders

**6000 – 30000 rpm**

220 Watt – 670 Watt

- Suitable for numerous finishing and deburring tasks
- With and without gear
- Front, side, rear exhaust
- Heavy duty heads available for demanding applications
- Models with extended heads available





Model Number			Speed	Abrasive Capacity	Type (Housing)	Weight	Head Height*	Length	Clamping Range mm**	Air Inlet NPT
Front Exhaust	Side Exhaust	Rear Exhaust	rpm			kg	mm	mm		
Series 12LF - (290 Watt) - chuck series 300										
12LF201-36		12LF281-36	20000	1/2" carbide bur, 1" grinding wheel	C	0.5	69	168	5.6 - 6.4	1/4"
12LF200-36		12LF280-36	12000	1/2" carbide bur, 1" grinding wheel	C	0.5	69	168	5.6 - 6.4	1/4"
Series 10LF - (290 Watt) - chuck series 300										
10LF201-36		10LF281-36	20000	1/2" carbide bur, 1" grinding wheel	A	0.5	69	168	5.6 - 6.4	1/4"
10LF200-36		10LF280-36	12000	1/2" carbide bur, 1" grinding wheel	A	0.5	69	168	5.6 - 6.4	1/4"
Series 12-13 - (220 Watt) - gearless - chuck series 300										
		12L1380-36	30000	1/2" carbide bur, 1" grinding wheel	C	0.5	94	180	5.6 - 6.4	1/4"
		12L1381-36	25000	1/2" carbide bur, 1" grinding wheel	C	0.5	94	180	5.6 - 6.4	1/4"
		12L1382-36●	20000	1/2" carbide bur, 1" grinding wheel	C	0.5	94	180	5.6 - 6.4	1/4"
Series 12-23 - (380 Watt) - gearless - chuck series 200										
12L2384-01			20000	3/4" carbide bur, 1 1/4" grinding wheel	C	0.91	140	190	5.6 - 6.4	1/4"
Series 12-22 - (450 Watt) - chuck series 200 - heavy duty head										
12L2252-01●			11000	3/4" carbide bur, 2" grinding wheel	C	1.5	99	236	5.6 - 6.4	1/4"
Series 12-22 - (450 Watt) - chuck series 300										
12L2218-36			18000	1/2" carbide bur, 1" grinding wheel	C	0.8	69	191	5.6 - 6.4	1/4"
Series 12-27 - (670 Watt) - chuck series 200 - heavy duty head										
12L2752-01			11000	1" carbide bur, 2" grinding wheel	C	1.5	99	249	5.6 - 6.4	1/4"
Series 12-27 - (670 Watt) - chuck series 300										
12L2718-36			18000	3/4" carbide bur, 1 1/4" grinding wheel	C	0.9	74	203	5.6 - 6.4	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

\*Overall height

\*\*Also available in 6 mm.

• Low oil blades



Mounting capacity for grinding wheels depends on wheel diameter, thickness and overhang. You can obtain speed recommendations from the wheel manufacturer.

STANDARD EQUIPMENT:

Corresponding collet chuck, chuck wrench

OPTIONAL:

Additional accessories: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102

GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter :

Series 12-12, 10-12, 12-13, 12-23, 116: 1/4" (4.8 mm)

Series 12-22, 12-27, 136: 5/16" (7.9 mm)



## Dotco Belt Sanders



12-12

12-13

**12000 – 20000 rpm**  
220 Watt – 380 Watt

- Sanding, deburring, removing paint
- With and without gear
- Ergonomic housing reduces cold air transmission to the operator
- Series 12-23 can be used with interchangeable arms



12-23



Removing paint



Finishing difficult  
to access areas

Model Number		Speed	Belt Capacity	Type (Housing)	Contact Arm	Weight	Length	Air Inlet NPT
Front Exhaust	Rear Exhaust	rpm				kg	mm	
Series 12-12* - (220 Watt) - sanding belt								
	12L1281-36B2	20000	1/2" wide x 12" long sanding belt	C	Straight	0.6	287	1/4"
	12L1280-36B2	12000	1/2" wide x 12" long sanding belt	C	Straight	0.6	287	1/4"
Series 12-13* - (220 Watt) - gearless - sanding belt								
	12L1382-36B2●	20000	1/2" wide x 12" long sanding belt	C	Straight	0.6	287	1/4"
	12L1382-36B4●	20000	1" wide x 12" long sanding belt	C	Straight	0.8	287	1/4"
Series 12-23 - (380 Watt) - gearless - woven or non-woven belt								
	12L2384-B1	20000	5/8" or 3/4" wide x 18" long belt	C	Straight	1.1	381	1/4"
	12L2384-K1 (Kit)	20000	(For details see below)	C	Straight/offset	1.1	381	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel  
 • Low oil blades



**GENERAL:**  
 Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.  
 Minimum hose inside diameter 1/4" (6.4 mm)

**STANDARD EQUIPMENT:**  
 Series 12-12, 12-13: Sanding belt with 80 grit and 120 grit or a medium grit, non-woven belt, corresponding wrenches, lube gun and gear lubricant  
 Series 12-23: Tool and contact arm, adjusting wrench

**OPTIONAL:**  
 Replace the "S" in the model number with "L" if you need a safety lever.  
 Exhaust hose (rear exhaust): See catalogue SP-102  
 Output drives: See catalogue SP-102  
 Sanding belts: See catalogue SP-102

\*Optional terminations for series 12-12 & 12-13  
 (All models may not be available):  
 -32 B x 1/4" 28 female thread; -36 B x 1/4" chuck



## Dotco Kit 12L2384-K1

On ordering the Dotco kit 12L2384-K1 you will receive the tool and three interchangeable arms, belts and wrenches. With the Dotco kit 12L2384-K1 you are ready for practically any finishing project!

### EQUIPMENT:

- 1 x tool with 3/4" wide, straight arm
- 2 x additional arms
  - 1 x 1/2" wide, straight arm
  - 1 x offset arm
- 3 x 1/4" x 18" aluminium oxide belts
  - 1 x 60 grit
  - 1 x 80 grit
  - 1 x 120 grit
- 3 x 1/2" x 18" aluminium oxide belts
  - 1 x 60 grit
  - 1 x 80 grit
  - 1 x 120 grit
- 2 x 3/4" x 18" aluminium oxide belts
  - 1 x 60 grit
  - 1 x 80 grit
- 1 x 3/4" x 18" medium non-woven belt

### Wrenches & other parts

- 1 x 3/4" open end wrench (adjustable)
- 1 x 9/16" open end wrench (adjustable)
- 1 x 9/64" hex wrench
- 1 x 3/16" hex wrench
- 1 x 1/4" wrench
- 1 x wrench attachment
- 1 x chuck body

- 1 x carrying case with foam inserts

# Dotco Buffers/Polishers



**2200 – 6200 rpm**

220 Watt – 1270 Watt

- Numerous tools available to suit your application requirements
- Front, side, rear exhaust

Model Number			Speed	Abrasive Capacity		Type (Housing)	Weight	Length	Height**	Clamping Range mm***	Air Inlet NPT
Front Exhaust	Side Exhaust	Rear Exhaust	rpm	Buffing Brush	Polishing Wheel		kg	mm	mm		
Series 12-10 - (220 Watt) - chuck series 200											
		12L1093-01	5000	3"	3"	C	0.7	183		5.6 - 6.4	1/4"
		12L1092-01	3200	3"	3"	C	0.7	183		5.6 - 6.4	1/4"
Series 12-25 - (670 Watt) - chuck series 200											
		12L2594-01	6200	4"	6"	C	0.9	236		5.6 - 6.4	1/4"
		12L2593-01	4700	4"	6"	C	0.9	236		5.6 - 6.4	1/4"
		12L2592-01	3200	4"	6"	C	0.9	236		5.6 - 6.4	1/4"
Series 12-27 & 10-27 - (670 Watt) - 5/8"-11 threaded spindle											
		12L2762-80•	4500*	4"	6"	C	1.5	267	98	5/8" - 11	1/4"
		12L2760-80•	3300*	4"	6"	C	1.5	267	98	5/8" - 11	1/4"
		12L2760-80	3300*	4"	6"	A	1.8	236	98	5/8" - 11	1/4"
Series 12-42 - (1270 Watt) - 5/8"-11 male threaded spindle											
		12L4203-80•	3400	4"	8"	C	2.9	346	98	5/8" - 11	1/2"

Housing identifier: A = Aluminium, C = Composite, S = Steel

\*With speed control

\*\*Overall height

\*\*\*Also available in 6 mm.

• Low oil blades



GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter

Series 12-10: 1/4" (6.4 mm)

Series 12-25, 12-27, 10-27: 5/16" (7.9 mm)

Series 12-42: 1/2" (12.7 mm)

STANDARD EQUIPMENT:

Series 12-10, 12-25: Corresponding collet chuck and chuck wrench

Series 10-27, 12-27: Spindle wrench

Series 12-42: Nut, washer, spacer ring and wrench

OPTIONAL:

Chucks: See catalogue SP-102

Exhaust hose (rear exhaust): See catalogue SP-102

Additional grip series 12-10: 6188

Additional grip series 12-25: 8088



## Backing Pads (Spiralcool)

For Dotco sanders with 5/8"-11 threaded spindles. The contour of the backing pad produces an airflow that cools the disc and prevents the excessive accumulation of material.

Flexibility	Part No. – Backing Pad Diameter (Max. Rated Speed)				
	4" 12000 rpm	4 1/2" 11000 rpm	5" 10000 rpm	7" 7000 rpm	9" 6000 rpm
Flexible	14-2197	14-2255	14-2115	14-2529	14-2202
Medium	14-2198	14-2256	14-2116	14-2200	14-2203
Rigid	14-2199	14-2257	14-2117	14-2201	

## Save-A-Disc Pads

For Dotco sanders with 5/8"-11 threaded spindle. Ribs on the backing plate cause a flexing action that throws off accumulated material.



14-2517

Diameter Inch	Part No.				
	Max. rpm	Assembly	Pad Only	Plate Only	Nut Only
5	7500	14-2515	14-2521	14-2522	14-2525
7	7500	14-2517	14-2521	14-2523	14-2525
9	7500	14-2519	14-2521		14-2525

## PSA Disc Holders Chuck:

Fit PSA disc holder directly in the chuck (1/8" or 1/4").



14-1112

## For Threaded Spindle:

Remove threaded shank from the PSA disc holder. Using the spindle adapter table, select the correct spindle and fit to the holder.

Part No.	PSA Disc Diameter	Shank Diameter	PSA Disc Female Thread
14-1146	1/2"	1/8"	5-40 female
14-1105	1/2"	1/4"	5-40 female
14-1147	3/4"	1/8"	5-40 female
14-1107	3/4"	1/4"	5-40 female
14-1170	1"	1/8"	5-40 female
14-1110	1"	1/4"	5-40 female
14-1111	1-1/2"	1/4"	1/4"-20 female
14-1112	2"	1/4"	1/4"-20 female
14-1113	3"	1/4"	1/4"-20 female
14-1114	4"	1/4"	1/4"-20 female

## Spindle Adapters

For use with PSA disc holders.



14-1144

Part No.	Adapter Description		
	Thread (for Tool Spindle)	Thread (for PSA Disc Holder)	Max. Disc Diameter
14-1142	1/4"-28 Male	5 -40 Male	1"
14-1144	1/4"-28 Male	1/4"-20 Male	4"
14-2903	5/8"-11 Male	5/16"-24 Male	4"
14-1212	5/8"-11 Male	1/4"-20 Male	4"
14-1211	5/8"-11 Female	3/8"-24 Male	4"

## Nut

For use with Dotco sanders with 5/8"-11 threaded spindle.



Part No.	Tool Series
14-2118	5/8"-11 threaded spindle

## Wrench

For use with backing pad nut 14-2118.



Part No.	Tool Series
14-2319	5/8"-11 threaded spindle

## Sanding Disc Cutter

With the aid of a scale, discs with a diameter of max. 9" can be cut to a diameter of 3" or 4". The double bevel cutting device leaves round cut edges that do not fray or crumble.



Part No.	Description
14-2535	Sanding disc cutter

## Replacement Blades

14-2590	Upper blade
14-2591	Lower blade

## Miniature Drill Chucks

For use with Dotco series 12-12.

For adapting right angle grinders with threaded spindle to drilling and disc sanding application (with PSA disc holders) and light grinding tasks.



14-1104

Shaft Diameter	Part No.	
	Assembly	Chuck
1/8"	14-1102*	14-0158**
1/4"	14-1104*	14-0168***
6 mm	14-1094	14-0170***

\* NOTE: For 1/4"-28 female thread\*\*

\*\* NOTE: For 5/16"-24 female thread - 1/8" chuck\*\*\*

\*\*\* NOTE: For 3/8"-24 female thread - 1/4" chuck

## Dotco Drills Overview

Dotco® drills are used daily in applications ranging from aerospace to oil fields and refineries. Three styles are available: pistol grip, straight handle (straight drills) and right angle models (right angle drills). Drills in this section have a power of between 0.3 and 0.9 HP. Additional grips are also available for some models.

### Parts Interchangeability

Tool maintenance can be both time-consuming and expensive. For this reason Dotco products have been developed with a high level of interchangeability of spare parts. As fewer spare parts are required for the repair of our tools, the inventory of necessary parts can be reduced and the repair of the tools simplified.

### Precision Manufactured Parts

The principle is simple – precision products can be manufactured with precision manufactured parts. Irrespective of whether a spindle, a drill chuck, a motor or an angle head, our parts are manufactured from the best materials and with the most accurate tolerances. You will understand why we are proud of the 0.0005" runout on our clamping tools.

### Latest Ergonomics - Adapted to the Human Hand.

The Dotco drill has long been valued as a workhorse in industry for demanding, repeated precision requirements in today's workbenches. During further development the drill has been extensively re-designed and ergonomically designed. Dotco drills offer more comfort and better productivity, and at the same time ensure less fatigue, risk of injury and lost working time. Of course, we have also adapted their performance to the new look.





## A Wonder of Technology and Ergonomics

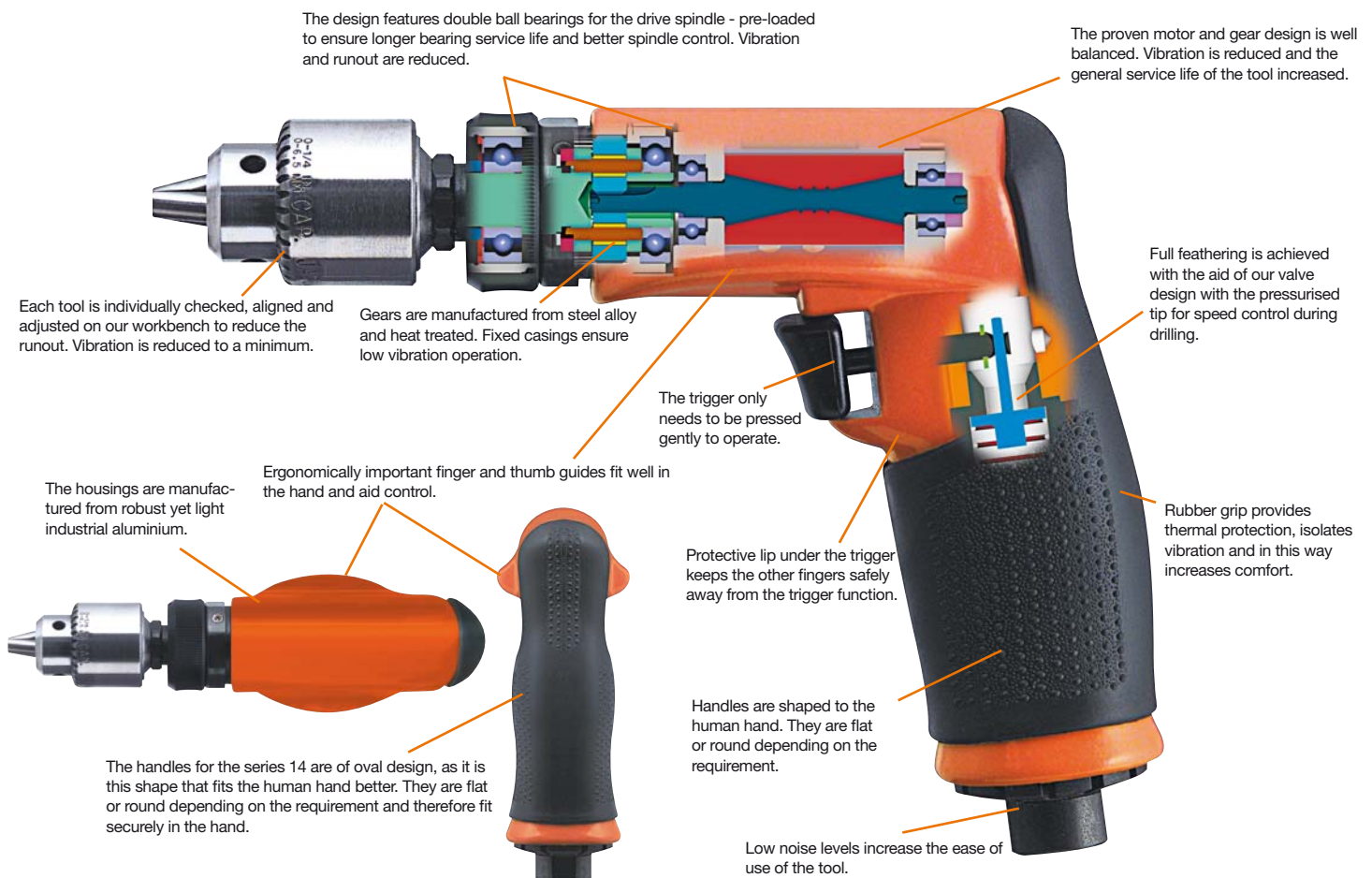
We have been able to make these extraordinary improvements thanks to new technology. Prototypes are now available quickly due to our in-house design platform so we can develop models in real time, provide prototypes to users and then further refine the ergonomic and performance criteria with their feedback.

The handles for the series 14 are of oval design, as it is this shape that fits the human hand better. The tool lies securely in the hand.

Our development work has also resulted in the integration of a rubber grip for better temperature control, as compressed air in the metal housing make the tool appear cold and reduces speed and efficiency.

In addition, the objective is direct force transmission so that the operator can use the tool with the greatest possible control, the greatest possible direct force, the lowest possible angular force and the lowest possible fatigue at the wrist. For this reason we have developed drills with ergonomic finger and thumb guides. And for this reason we have also fitted a protective lip under the trigger so that the other fingers are kept safely away from the trigger function.

It is only necessary to press the trigger gently. The trigger mechanism comprises a valve with a pressurised tip. As soon as the trigger resistance is overcome, you can start work.



## Dotco Drills

### 500 – 28500 rpm

220 Watt – 300 Watt

- Large selection of tools for your application
- Rear exhaust
- Some models available with angle head
- Ergonomically important finger and thumb guides aid control



### 330 – 2000 rpm

300 Watt – 670 Watt

- Non-reversible
- Ergonomically important finger and thumb guides aid control
- Excellent suited to aerospace, metal and wood working





Model Number	Speed	Drill Diameter (Capacity)	Type (Housing)	Weight	Length	Head Height	Drill Chuck Size	Air Inlet NPT
	rpm			kg	mm	mm		
Series 15LF straight - (300 Watt)								
15LF081-38+	5300	1/4"	C	0.6	203	---	1/4"	1/4"
15LF082-38+	4000	1/4"	C	0.6	203	---	1/4"	1/4"
15LF083-38+	3300	1/4"	C	0.6	203	---	1/4"	1/4"
15LF087-38+	600	1/4"	C	0.9	236	---	1/4"	1/4"
Series 15-14 right angle - (220 Watt)								
15L1489-38	3600*	1/4"	C	0.7	203	76	1/4"	1/4"
15L1488-38	2400*	1/4"	C	0.7	203	76	1/4"	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel

\*Idle gear

+Model available without chuck, replace termination number -38 with -40.

## GENERAL

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

Minimum hose inside diameter

Series 15LF, 15-14: 1/4" (6.4 mm)

Series 15-29: 5/16" (7.9 mm)

## STANDARD EQUIPMENT

Jacobs drill chuck (with thread), chuck key, additional grip  
(all straight models with keyed type chuck larger than 1/4")

## OPTIONAL

Exhaust hose (rear exhaust): See catalogue SP-102

Additional grip: 539602

Model Number		Speed	Drill Diameter (Capacity)	Weight**	Length**	Drill Chuck Size	Air Inlet NPT
With Drill Chuck	3/8"-24 Male Thread	rpm		kg	mm		
Series 14CF - (300 Watt) - non-reversible							
14CFS90-38		29000	1/4"	0.68	145	1/4"	1/4"
14CFS91-38		5200	1/4"	0.68	145	1/4"	1/4"
14CFS92-38		3800	1/4"	0.68	145	1/4"	1/4"
14CFS93-38		3200	1/4"	0.68	145	1/4"	1/4"
14CFS94-38		2400	1/4"	0.72	145	1/4"	1/4"
14CFS95-38		1000	1/4"	0.82	175	1/4"	1/4"
14CFS96-38		700	1/4"	0.82	175	1/4"	1/4"
14CFS97-38		600	1/4"	0.82	175	1/4"	1/4"
Series 14CN - (450 Watt) - non-reversible							
14CSL90-38	14CSL90-40	20000	1/4"	0.95	160	1/4"	1/4"
14CSL98-38	14CSL98-40	6000	1/4"	0.95	160	1/4"	1/4"
14CSL91-38	14CSL91-40	5200	1/4"	0.95	160	1/4"	1/4"
14CSL92-38	14CSL92-40	3200	1/4"	0.95	160	1/4"	1/4"
14CSL95-51	14CSL95-40	1300	3/8"	1.31	205	3/8"	1/4"
14CSL97-51	14CSL97-40	500	3/8"	1.31	205	3/8"	1/4"
Series 14CN - (670 Watt) - non-reversible							
14CNL90-38	14CNL90-40	20000	1/4"	1.00	173	1/4"	1/4"
14CNL98-38	14CNL98-40	6000	1/4"	1.00	173	1/4"	1/4"
14CNL91-51	14CNL91-40	5200	3/8"	1.08	183	3/8"	1/4"
14CNL92-51	14CNL92-40	3200	3/8"	1.08	183	3/8"	1/4"
14CNL95-51	14CNL95-40	1300	3/8"	1.27	218	3/8"	1/4"
14CNL97-53	14CNL97-40	500	1/2"	1.59	231	1/2"	1/4"

## GENERAL:

See catalogue SP-102 for additional features and advantages.

Air inlet tube: use 1/4" NPT - hoses with 5/16" (7.9 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

## STANDARD EQUIPMENT:

14CF: Jacobs drill chuck (with thread), chuck key

14CS, 14CN: Jacobs drill chuck (with thread), chuck key,  
additional grip (all models with keyed type chuck larger than 1/2")

## OPTIONAL:

Exhaust hose: See catalogue SP-102

# Dotco Right Angle Drills

**320 – 5600 rpm**

300 Watt – 670 Watt

- Impressive range of speeds for your drilling applications
- Comprehensive range of angle heads - 45°, mini 90°, 360°, compact or heavy duty 90°



## Optional Angle Heads

(NOTE: Not all models are available with all angle heads.)

Term. No.	Spindle Thread
-----------	----------------

Series 600 miniature angle head

- 61 #10-32 female thread
- 62 1/4"-28 female thread
- 63 9/32"-40 female thread
- 64 5/16"-24 female thread



Series 600

Term. No.	Spindle Thread
-----------	----------------

Series 700 compact angle head

- 72 1/4"-28 female thread
- 73 9/32"-40 female thread
- 74 5/16"-24 female thread

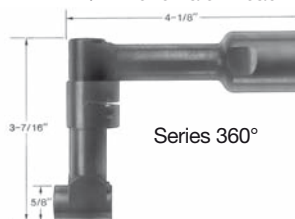


Series 700

Term. No.	Spindle Thread
-----------	----------------

360° miniature angle head

- 91 #10-32 female thread
- 92 1/4"-28 female thread



Series 360°

Term. No.	Spindle Thread
-----------	----------------

45° miniature angle head

- 42 1/4"-28 female thread
- 43 9/32"-40 female thread
- 44 5/16"-24 female thread



Series 45°

Term. No.	Spindle Thread
-----------	----------------

Series 500 angle head heavy duty

- 52 1/4"-28 female thread
- 53 9/32"-40 female thread
- 54 5/16"-24 female thread
- 55 3/8"-24 female thread
- 59 1/4" keyed type chuck
- 59NC 3/8"-24 male thread



Series 500



Series 500

Model Number	Speed	Drill Diameter (Capacity)	Type (Housing)	Weight	Length	Spindle Size	Air Inlet NPT
	rpm			kg	mm		
Light duty head - series 15LF - (300 Watt) - rear exhaust							
15LF281-62	5300	1/4"	C	0.75	272	1/4"-28*	1/4"
15LF282-62	4000	1/4"	C	0.75	272	1/4"-28*	1/4"
15LF283-62	3300	1/4"	C	0.75	272	1/4"-28*	1/4"
15LF284-62	2400	1/4"	C	0.85	282	1/4"-28*	1/4"
15LF285-62	1000	1/4"	C	0.85	300	1/4"-28*	1/4"
15LF286-62	750	1/4"	C	0.85	300	1/4"-28*	1/4"
15LF287-62	600	1/4"	C	0.85	300	1/4"-28*	1/4"
Light duty head - series 15LS - (450 Watt) - rear exhaust							
15LS281-62	5430	1/4"	C	1.05	292	1/4"-28*	1/4"
15LS282-62	3370	1/4"	C	1.05	292	1/4"-28*	1/4"
15LS283-62	2010	1/4"	C	1.05	292	1/4"-28*	1/4"
15LS284-62	1660	1/4"	C	0.85	315	1/4"-28*	1/4"
15LS285-62	1360	1/4"	C	0.85	323	1/4"-28*	1/4"
15LS286-62	840	1/4"	C	0.85	323	1/4"-28*	1/4"
15LS287-62	500	1/4"	C	0.85	323	1/4"-28*	1/4"
Light duty head - series 15LN - (670 Watt) - rear exhaust							
15LN288-62	5600	1/4"	C	1.15	305	1/4"-28*	1/4"
15LN281-62	5000	1/4"	C	1.15	305	1/4"-28*	1/4"
15LN282-62	3100	1/4"	C	1.15	305	1/4"-28*	1/4"
15LN284-62	1530	1/4"	C	1.15	305	1/4"-28*	1/4"
Heavy duty head - series 15LF - (300 Watt) - rear exhaust							
15LF281-52	3700	1/4"	C	0.75	280	1/4"-28*	1/4"
15LF282-52	2800	1/4"	C	0.75	280	1/4"-28*	1/4"
15LF283-52	2300	1/4"	C	0.75	280	1/4"-28*	1/4"
15LF285-52	700	1/4"	C	0.95	305	1/4"-28*	1/4"
15LF286-52	525	1/4"	C	0.95	305	1/4"-28*	1/4"
15LF287-52	420	1/4"	C	0.95	305	1/4"-28*	1/4"
Heavy duty head - series 15LS - (450 Watt) - rear exhaust							
15LS281-52	3800	1/4"	C	1.05	297	1/4"-28*	1/4"
15LS282-52	2360	1/4"	C	1.05	297	1/4"-28*	1/4"
15LS283-52	1410	1/4"	C	1.05	297	1/4"-28*	1/4"
15LS287-52	350	1/4"	C	1.25	330	1/4"-28*	1/4"
Heavy duty head - series 15LN - (670 Watt) - rear exhaust							
15LN288-52	3900	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN281-52	3500	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN282-52	2170	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN283-52	1300	1/4"	C	1.15	310	1/4"-28*	1/4"
15LN284-52	1070	1/4"	C	1.35	343	1/4"-28*	1/4"
15LN285-52	870	1/4"	C	1.35	343	1/4"-28*	1/4"
15LN286-52	540	1/4"	C	1.35	343	1/4"-28*	1/4"
15LN287-52	320	1/4"	C	1.35	343	1/4"-28*	1/4"

Housing identifier: A = Aluminium, C = Composite, S = Steel  
\*Female thread

GENERAL:  
Minimum hose inside diameter  
Series 15LF, 15LS, 15LN: 1/4" (6.4 mm)  
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Light duty tools:

Series 600 miniature angle head with 1/4"-28 female thread

Heavy duty tools:

Series 500 heavy duty head with 1/4"-28 female thread

#### OPTIONAL:

For safety lever replace the "S" in the model number with "L".

Exhaust hose (rear exhaust): See catalogue SP-102

Chucks for 9/32"-40 connections: See catalogue SP-102

#### OPTIONAL CHUCK CONNECTIONS:

NOTE: The part numbers in the above table are equipped with a series 600 (-62) angle head with 1/4"-28 female thread. The models for heavy duty are equipped with series 500 (-52) angle heads with a 1/4"-28 female thread. On ordering other angle head configurations the related termination number from the tables in the catalogue SP-102 is to be stated instead of the standard termination number -62 or -52.

Not all models are available with all angle heads.

# Dotco Accessories for Drills

## Optional Drill Drives

For use with Dotco series 15LF, 15LS and 15LN - capacity: 1/4" diameter drill.

These drill drives can be ordered separately as accessories or in conjunction with a complete tool. In the case of the order of a complete tool, use the basic model number from the related catalogue page for series 15LF, 15LS and 15LN and replace the termination numbers (e.g. -32) with the termination numbers for the required special drive (e.g. -71).

Model Number	Term. No.	Threaded Spindle
Compact angle head series 700		
1025477	- 72	1/4"-28 female thread
1025476	- 73	9/32"-40 female thread
1025668	- 74	5/16"-24 female thread
Miniature angle head series 600		
1025314	- 61	#10-32 female thread
1025409	- 62	1/4"-28 female thread
1025313	- 63	9/32"-40 female thread
1025328	- 64	5/16"-24 female thread
Heavy duty angle head series 500		
1021289	- 52	1/4"-28 female thread
1021292	- 53	9/32"-40 female thread
1021291	- 54	5/16"-24 female thread
1025780	- 55	3/8"-24 female thread
45° angle head		
1025730	- 42	1/4"-28 female thread
1025731	- 43	9/32"-40 female thread
1025733	- 44	5/16"-24 female thread
360° angle head		
1025696	- 91	#10-32 female thread
1025694	- 92	1/4"-28 female thread

Part Number	Term. No.	Drill Chuck
Heavy duty angle head		
1021620	- 59	Series 500 angle head with drill chuck, capacity 1/4"
1021620	- 59NC	Series 500 angle head without drill chuck, 3/8"-24 male thread



1025447



1025409



1021289



1025730



1025694



1021620



# Simple. Versatile. Robust.

## Powerful Cleaning Up.

Dotco tools are known for their durability, reliability and versatility. They are one of the leading brands in the material removal sector. The quality is expressed in the outstanding design combined with excellent technology, as a result the tools are not only small, handy and light, but also robust enough for demanding environments.

This aspect also applies to the new Dotco Venturi X – the 2-in-1 compressed air vacuum system and air blow gun. Your aid for cleaning your workplace! In any sectors of industry they are now indispensable: in manufacturers, at machine tool manufacturers, in the automotive industry, on working wood, in the aerospace industry, in shipyards, in foundries etc.



Specifications		
DETAILS	Min. hose inside diameter	8 mm
	Recommended air pressure	6.2 bar
	Ø air consumption	95 l/min
	Noise	84 dBA
	Length	145 mm
	Weight	0.68 kg
	Air inlet tube	1/4" NPT
	Vibration (m/s²)	< 0.4 m/s²

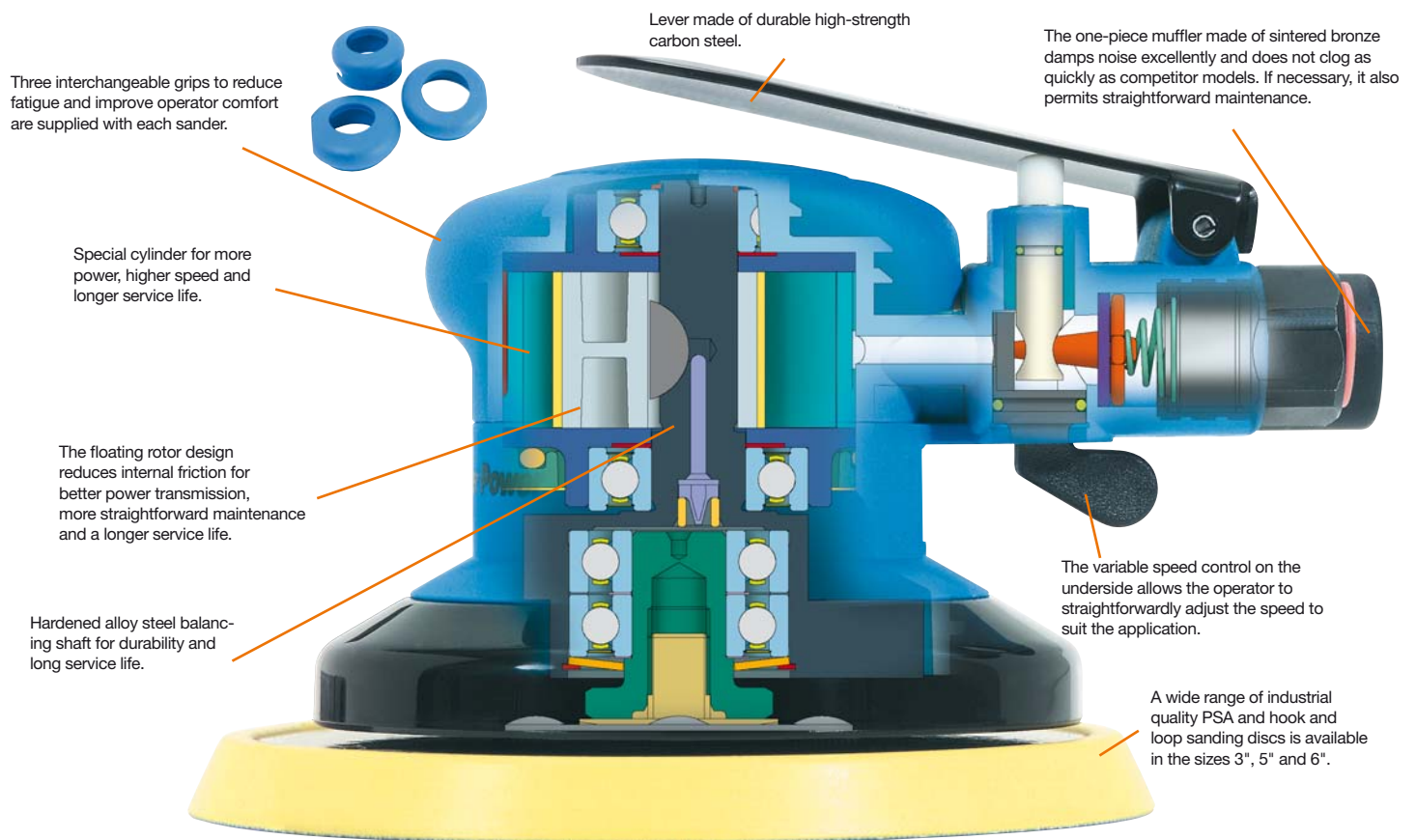


# Master Power Sanders

## Series MP4400

### Orbital Sander

- The low shape gives the operator more control and better comfort during sanding.
- Consumes less air than comparable tools – ideal for smaller workshops with small compressors, but is also economical in large industrial plants.
- The low weight and low vibration are advantages of the high-strength polymer material.
- 3/16" sanding pattern for fine finishing or 3/32" sanding pattern for high quality finishing.
- Different levers permit the user to visually differentiate between 3/16" and 3/32" tools.



# Master Power Sander Specifications



Model Number		Sanding Pad Size	Speed	Weight	Height	Length
3/16"	3/32"		rpm	kg	mm	mm
12000 rpm - non-vacuum						
MP4400-03		3.5	12000	0.71	84.58	129.79
MP4400-05*	MP4403-05*	5.0	12000	0.73	84.58	139.19
MP4400-06*	MP4403-06	6.0	12000	0.76	84.58	139.19
12000 rpm - central vacuum						
MP4400-35	MP4403-35HL	5.0	12000	0.75	84.58	179.32
12000 rpm - central vacuum						
MP4400-15	MP4403-15	5.0	12000	0.78	84.58	196.75

12000 rpm - self generated vacuum, dusts bag, hose

## GENERAL:

Air inlet tube 1/4" NPT

Minimum hose size 1/4"

Tool performance data measured at 6.2

2 bar inlet air pressure at the air inlet tube, threaded mounting 5/16-24,

Air consumption: 0.43 m³/min

## STANDARD EQUIPMENT:

Instruction manual and spare parts list.

3/8" low profile, medium density premium urethane backing pad

## 3 interchangeable grips:

70421900 - 2 1/2"

70422000 - 2 3/4"

70422100 - 3"

## OPTIONAL:

Vacuum hose: 100704300

Spare parts kit: 88004400

Rotor & blades kit: 70444800

Available with hook and loop fastening.



MP4400-03



MP4400-05



MP4403-05  
(with 3/32" chromium lever)



MP4400-06

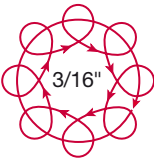


MP4400-35

# Master Power Sanders

## Orbital Sander

- 9500 rpm
- Precise feathering throttle produces a better result
- Integrated air pressure regulator for maximum operator control
- Light, but nevertheless durable handle made of composite material
- Interchangeable handle for operation by right or left-handers



## High Speed High Performance Vertical Sander

- Ideal for deburring, light sanding and rust removal
- Developed for sanding contours and difficult to access areas
- Variable speed regulator for control while working
- Ergonomic handle for operator comfort
- Lower noise pressure level and lighter than competitor models
- 7/16"-20 spindle thread



Model Number	Speed	Sanding Disc (Capacity)	Length	Weight	Hose Size	Air Consumption	Air Inlet NPT
	rpm		mm	kg	mm	m³/min.	
Orbital sander							
MP4425	9500	6"	203	1.3	6.4	0.57	1/4"
Right angle sander							
MP6151	14000	5"	160	0.95	10	0.62	1/4"

GENERAL:  
Air inlet tube 1/4" NPT  
Use a hose with 10 mm inside diameter for MP4425.  
Use a hose with 6.4 mm inside diameter for MP6151.  
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:  
Instruction manual and spare parts list.  
MP4425: 543021 6" PSA pad

OPTIONAL:  
6" H&L pad for model MP4425 - no. 543023  
60538 Master Guard oil (approx. 0.1 l)  
60539 Master Guard oil (approx. 1.0 l)  
63593 8" hose  
22034 Hose line lubricator



## Series MP8000, MP8001 & MP8002 Air Vacuums

- Powerful motor
- Low noise level
- Long service life with low maintenance effort. No moving parts.
- Increased performance and effectiveness due to venturi system
- Overflow valve standard on all units
- Filtering of very fine particles down to 5 micron
- Safe, as electricity is not used. Picks up dry, wet and in dangerous conditions\*
- Cast aluminium epoxy-coated heads for maximum corrosion protection
- Recommended hose inside diameter 12.5 mm



\*ATTENTION: Earth the air vacuum and use a conductive hose to keep static electricity under control.

Model Number	Description	Hose Size	Suction Depth	Flow Rate	Weight kg	C.F.M. @ 6.2 bar	Air inlet tube	Standard Equipment
MP8000	20 l wet/dry air vacuum	1 1/2"	3 metres	3 m <sup>3</sup> /min	8.75	36	3/8"	10' x 1 1/2" PVC hose #710040, 2-stage filter cartridge #718460
MP8001	70 l wet/dry air vacuum	1 1/2"	3 metres	3 m <sup>3</sup> /min	17.92	36	3/8"	10' x 1 1/2" PVC hose #710040, 2-stage filter cartridge #718461, Extra heavy duty dolly with three wheels
MP8002	190 l wet/dry air vacuum (container not included)	1 1/2"	3 metres	3 m <sup>3</sup> /min	8.39	36	3/8"	10' x 1 1/2" PVC hose #710040, 2-stage filter cartridge #718462

NOTE: Foam muffler 80098300 is used on all air vacuums to reduce noise.

# Master Power Air Vacuum Accessories



No. 710006 floor tool with brush,  
made of plastic



No. 710009 floor tool with brush,  
made of metal



No. 710011 floor tool,  
made of metal



No. 710012 squeegee tool, made of plastic



No. 710013 12" floor tool



No. 710014 11" crevice tool  
plastic tool



No. 710015 18" tool for large quantities, alu-  
minium



No. 710016 6" tool



No. 710017 nozzle for cleaning overhead  
(pipes > 6" diameter)



No. 710018 nozzle for cleaning overhead  
(pipes 4-6" diameter)



No. 710025 tool for large quantities, made of plastic



No. 710026 dust brush, aluminium



No. 710027 crevice tool,  
aluminium



No. 710028 dust brush, made of plastic



No. 710030 extension with  
one bend, aluminium



No. 710031 pipe with two bends



No. 710032 extension 54", aluminium



No. 710033 extension with two bends, aluminium



No. 710034 floor wand, two-piece,  
54", made of metal



No. 710040 10' x 1 1/2" PVC hose  
No. 710041 15' x 1 1/2" PVC hose  
No. 710043 25' x 1 1/2" PVC hose



No. 710044 conductive static hose with  
cuff 10' x 1 1/2"  
No. 710045 conductive static hose with  
cuff 20' x 1 1/2"



No. 800992 coupling for no. 710045



No. 710051 crevice tool



MP1454-38

## MP1454-38

- Motor power 220 Watt
- Non-reversible
- Ergonomic design with comfort grip
- Small size is ideal for difficult to access areas; grip is almost at 90° to the spindle
- Trigger start for variable speeds
- Exhaust through the grip
- Weight 0.68 kg
- 3/8"-24 thread mounting



MP1457-51

## MP1457-51

- Motor power 750 Watt
- Non-reversible
- Double-row ball bearing for high runout accuracy
- Parts interchangeable with Master Power nutrunners
- 2-stage trigger start for gentle starting
- Integrated muffler
- Hardened, precision ground parts for longer service life
- 3/8"-24 thread mounting

Model Number	Speed	Power Watt	Chuck (Capacity)	Length	Weight kg	Air Consumption m³/min.	Air Inlet NPT
	rpm			mm			
MP1454-38	3000	220	6.5 mm	140.0	0.68	0.34	1/4"
MP1457-51	2600	750	10 mm	191.0	0.85	0.71	1/4"

GENERAL:  
Air inlet tube 1/4" NPT  
Use a hose with 1/4" (6.4 mm) inside diameter.  
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

STANDARD EQUIPMENT:  
Chuck and chuck key.  
Instruction manual and parts list.

# Master Power Drills

## MP1463-51

- Motor power 750 Watt
- Reversible
- Ball bearings on output spindle for high runout accuracy
- Parts interchangeable with Master Power nutrunners
- 2-stage trigger start for gentle starting
- Integrated muffler
- Hardened, precision ground parts for longer service life
- 3/8"-24 thread mounting



MP1463-51

## MP1458-55

- Motor power 900 Watt
- Non-reversible
- Ball bearings on output spindle for high runout accuracy
- Parts interchangeable with Master Power nutrunners
- 2-stage trigger start for gentle starting
- Integrated muffler
- Hardened, precision ground parts for longer service life
- 3/8"-24 thread mounting



MP1458-55

Model Number	Speed	Power Watt	Chuck (Capacity)	Length	Weight	Spindle Offset	Air Inlet NPT
	rpm			mm	kg	mm	
MP1463-51	1800	750	10 mm	173.0	1.1	20.6	1/4"
MP1458-55	1200	900	13 mm	229.0	0.95	20.6	1/4"

**GENERAL:**  
Air inlet tube 1/4" NPT  
Use a hose with 1/4" (6.4 mm) inside diameter.  
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

**STANDARD EQUIPMENT:**  
Chuck and chuck key.  
Instruction manual and parts list.





MP2264



MP2266

## Series MP2260

- Higher power-weight ratio
- Speed of a nutrunner, performance of an impact wrench
- Ideal for soft fastening cases
- 4 integrated speed settings for variable torques
- Smooth, efficient impact mechanism prevents torque reaction
- 100% ball-bearing design
- Reversible
- Detachable belt clip (MP2264, MP2265)



MP2265

Model Number	Output Drive	Torque Range	Speed	Impacts per Minute	Bolt Size	Weight	Air Consumption
	in.	Nm	rpm		mm	kg	m³/min.
Pistol							
MP2264	1/4 quick-change chuck	13.5 - 135	10000	1700	10	1.0	0.57
MP2265	3/8 square drive*	13.5 - 135	10000	1700	10	1.0	0.57
Straight							
MP2266	1/4 quick-change chuck	13.5 - 135	9500	1700	10	1.0	0.57

### GENERAL:

Air inlet tube 1/4" NPT

Use a hose with 1/4" (6.4 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

\*Pin locking

### OPTIONAL:

60538 Master Guard oil (approx. 0.1 l)

60539 Master Guard oil (approx. 1.0 l)

22034 Hose line lubricator

70497000 Flow regulator

88007045 Trigger start assembly kit, MP2264, MP2265

### STANDARD EQUIPMENT:

Instruction manual and parts list.

# Master Power Impact Wrenches

## MP2271

- Reversible
- Full power forward and reverse
- Unique butterfly throttle
- Integrated 4-stage power regulator



MP2271

## MP2276

- Light, but nevertheless durable composite housing
- Ergonomic handle for improved operator comfort
- Integrated 4-stage power regulator
- Reversible



MP2276

Model Number	Output Drive	Torque Range	Speed	Impacts per Minute	Bolt Size	Weight	Air Consumption
	in.	Nm	rpm		mm	kg	m³/min.
Straight							
MP2271	3/8 square drive	54 - 68	10500	900	M 10	1.0	0.62
Pistol							
MP2276	3/8 square drive	95 - 122	7500	1100	M 12	1.4	0.99

### GENERAL:

Air inlet tube 1/4" NPT

Use a hose with 1/4" (6.4 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

\*Pin locking

### STANDARD EQUIPMENT:

Instruction manual and parts list.

### OPTIONAL:

60538 Master Guard oil (approx. 0.1 l)

60539 Master Guard oil (approx. 1.0 l)

22034 Hose line lubricator

70497000 Flow regulator

88007045 Trigger start assembly kit, MP2264, MP2265



MP2295

## Series MP2290

- Two hammer anvil for reduced vibration
- Higher power-weight ratio
- Integrated 4-stage power regulator
- 100% ball-bearing motor design
- Full power forward and reverse
- Smooth, efficient impact mechanism
- Reversible



MP2294



Model Number	Output Drive	Torque Range	Speed	Impacts per Minute	Bolt Size	Weight	Air Consumption
	in.	Nm	rpm		mm	kg	m <sup>3</sup> /min.
MP2294	1/2 (ring locking)	50 - 502	6500	1400	M 20	2.4	1.13
MP2295	1/2 (pin locking)	50 - 502	6500	1400	M 20	2.4	1.13

### GENERAL:

Air inlet tube 1/4" NPT

Use a hose with 1/4" (6.4 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

### STANDARD EQUIPMENT:

Instruction manual and parts list.

### OPTIONAL:

60538 Master Guard oil (approx. 0.1 l)

60539 Master Guard oil (approx. 1.0 l)

22034 Hose line lubricator

63593 8" hose

# Master Power Pencil Grinders

## MP4200 & MP4201

- Ideal for precision de-burring
- Light, ergonomically designed and vibration-free
- Exhaust to rear, guide air away from the working area
- Standard with hose and 1.5 metre supply hose and 0.3 metre exhaust hose
- Ideal for difficult to access areas
- Slim comfortable design with ergonomic grip for operator comfort
- Double bearing for improved service life on MP4200 inline version
- Includes 1/8" and 3 mm collet chuck



Model Number	Power Watt	Speed	Abrasive (Capacity)		Length	Weight	Hose	Air Consumption	Air Inlet NPT	Chuck Size
		rpm	Carbide Bur	Diamond Pin	mm	kg	Inside Diameter	m³/min.		
Straight										
MP4200	100	7000	1/4"	1/4"	136	0.2	5 mm	0.23	1/8"	1/8", 3 mm
Angle										
MP4201	100	70000	1/4"	1/4"	150	0.2	5 mm	0.23	1/8"	1/8", 3 mm

### GENERAL:

Air inlet tube 1/4" NPT

Use a hose with 1/4" (6.4 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

### STANDARD EQUIPMENT:

Collect chuck, collet chuck wrench

### OPTIONAL:

MP4200 - 70617600 1/8" chuck kit (5 pieces), 70620200PT, 3 mm chuck kit (5 pieces)

MP4201 - 70618800 1/8" chuck kit (5 pieces), 70620400PT, 3 mm chuck kit (5 pieces)





MP4424



MP4430

## MP4424 & MP4430 Die Grinders

- Ideal for general applications such as grinding small welding seams, polishing and deburring sharp edges.
- Ergonomic handle for operator comfort
- Integrated centrifugal regulator
- 360° air inlet tube swivel
- Exhaust to rear, guides air away from the working area
- 1/4" chuck

## MP4458

- Robust steel housing
- Ergonomic design
- Front exhaust
- 1/4" chuck - series 200



MP4458

1.18" diameter



Model Number	Power Watt	Speed	Wheel Diameter	Carbide Bur	Length mm	Weight kg	Hose Inside Diameter	Air Consumption	Air Inlet NPT	Chuck Size
		rpm						m <sup>3</sup> /min.		
MP4424	220	20000	1"	1/2"	160	0.55	10	0.51	1/4"	1/4"
MP4430	220	23000	1"	1/2"	153	0.41	10	0.48	1/4"	1/4"
MP4458	220	25000	1 1/2"	1"	154	0.60	10	0.65	1/4"	1/4"

### GENERAL:

Air inlet tube 1/4" NPT

Use a hose with 1/4" (6.4 mm) inside diameter.

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

### STANDARD EQUIPMENT:

Collect chuck, collet chuck wrench

### OPTIONAL:

MP4424 & MP4430:

70619500 3/16" chuck;

70610500 1/4" chuck;

70610600 6 mm chuck

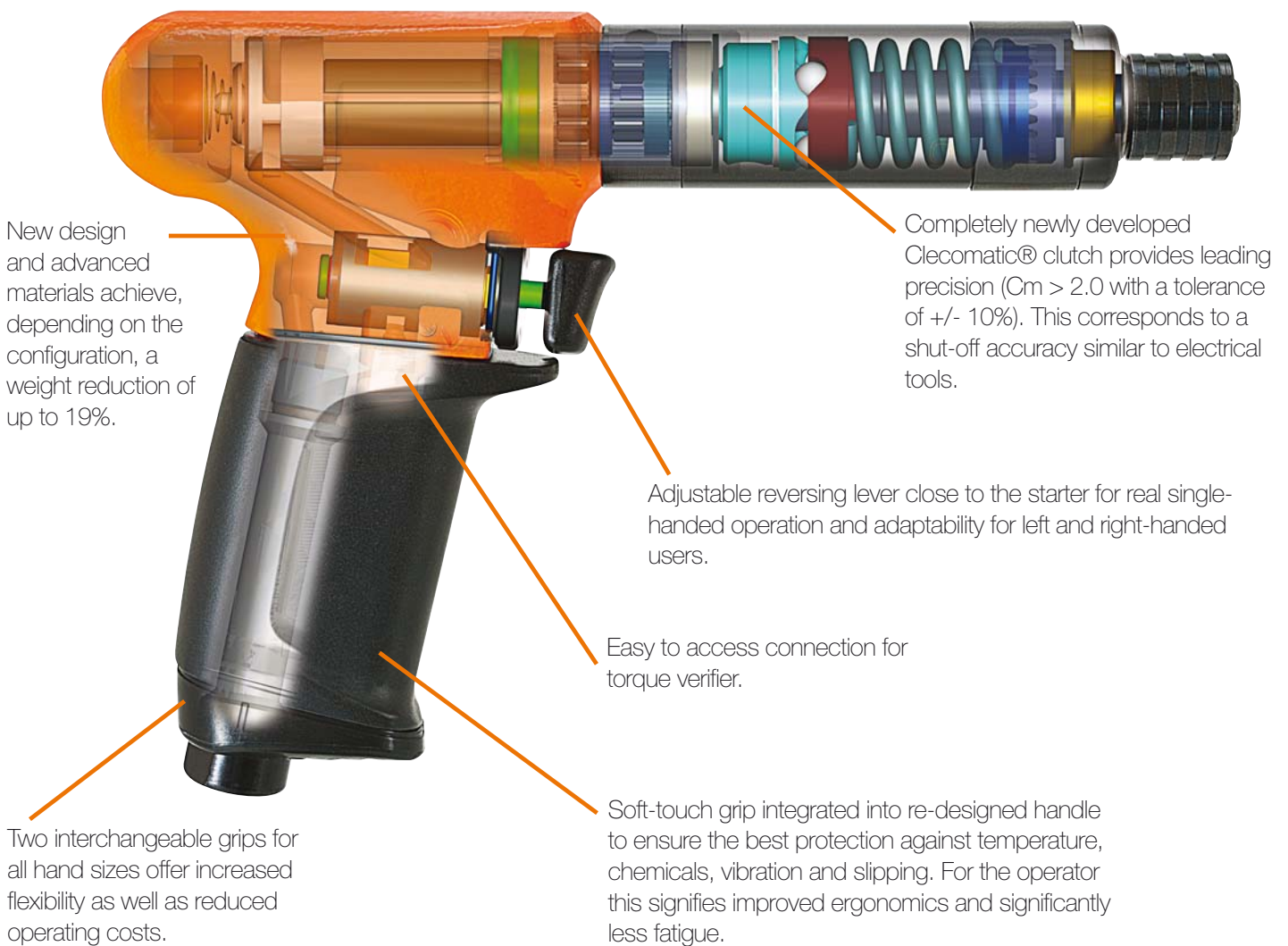
MP4424:

543944 - approx. 0.45 l angle head grease

# Precision. Durability.

## Legendary Reliability.

Your productivity is for us the first priority. For this reason during the development of the new Cleco 19 series we have successfully combined your experience with our specialist knowledge. The result was the most precise, durable and easiest to use nutrunner family on the market. The Cleco 19 series offers you the optimal solution for most demanding fastening applications where precision, repeatability and service life must meet very high requirements.



# Productivity.

P I S T O L	Model Number		Torque Range		Free Speed (rpm)	19P		19T		Air Inlet NPT	Recom- mended Hose Size
	19P Series	19T Series	Min. Nm	Max. Nm		Length (mm)	Weight (kg)	Length (mm)	Weight (kg)		
	Pistol version with push & trigger start and Clecomatic® clutch										
	19PCA02Q	19TCA02Q	0.6	2.1	2800	206	0.6	202	0.7	1/4"	3/8"
	19PCA03Q	19TCA03Q	0.6	2.9	1900	211	0.7	207	0.7	1/4"	3/8"
	19PCA04Q	19TCA04Q	1.1	4.5	1100	206	0.6	202	0.7	1/4"	3/8"
	19PCA05Q	19TCA05Q	1.1	5.1	660	216	0.7	212	0.7	1/4"	3/8"
	19PCA06Q	19TCA06Q	1.1	5.1	260	216	0.7	212	0.7	1/4"	3/8"
	19PCA07Q	19TCA07Q	1.7	6.8	660	216	0.7	212	0.7	1/4"	3/8"
	19PCA09Q	19TCA09Q	1.7	8.9	470	248	0.7	235	0.8	1/4"	3/8"
	Pistol version with trigger start and Clecomatic® clutch										
	19PTA02Q	19TTA02Q	0.6	2.1	2800	204	0.6	199	0.7	1/4"	3/8"
	19PTA03Q	19TTA03Q	0.6	2.9	1900	209	0.7	204	0.7	1/4"	3/8"
	19PTA04Q	19TTA04Q	1.1	4.5	1100	204	0.6	199	0.7	1/4"	3/8"
	19PTA05Q	19TTA05Q	1.1	5.1	660	214	0.7	210	0.7	1/4"	3/8"
	19PTA06Q	19TTA06Q	1.1	5.1	260	214	0.7	210	0.7	1/4"	3/8"
	19PTA07Q	19TTA07Q	1.7	6.8	660	214	0.7	210	0.7	1/4"	3/8"
	19PTA09Q	19TTA09Q	1.7	8.9	470	248	0.7	235	0.8	1/4"	3/8"
	19PTA15Q	19TTA15Q	5.1	14.7	260	247	0.9	243	0.9	1/4"	3/8"
	Pistol version with direct output drive										
	19PTS02Q	19TTS02Q		2.1	2800	150	0.5	146	0.5	1/4"	3/8"
19PTS03Q	19TTS03Q		2.9	1900	155	0.5	154	0.5	1/4"	3/8"	
19PTS04Q	19TTS04Q		4.5	1100	150	0.5	146	0.5	1/4"	3/8"	

All tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube. Air consumption generally 310 l/min.



19PTA  
series



19TTA  
series



19PTS  
series



19TTS  
series

# Cleco Pneumatic Inline Nutrunners

## 2 Series

Torque range: 0.06 - 0.9 Nm

- Push-to-start
- Push-button reverse
- Torque adjustment from exterior
- 1/4" quick-change chuck

2RSA-10SB



**NEW!**

19SPA05Q



**NEW!**

19SCA05Q



## 19 Series

Torque range: 0.6 - 5.1 Nm

- Push-to-start and lever push-to-start
- Torque adjustment from exterior
- 1/4" quick-change chuck

## 8 Series

Torque range: 1.7 - 8.5 Nm

- Push-to-start and lever push-to-start
- Push-button reverse
- Quick-change chuck

88RSA-5CQ



## 88 Series

Torque range: 1.7 - 19 Nm

- Push-to-start and push & lever start
- Push-button reverse
- Quick-change chuck or 3/8" square drive

8RSA-10BQ



## 35 Series

Torque range: 1.7 - 20 Nm

- Push-button reverse and push-to-start
- Torque adjustment from exterior
- Quick-change chuck or square drive

35RSA-10-3





Model Number	Torque Range		Speed	Length	Weight	Air Consumption		
	Tool	With Std. Spring				Air Inlet NPT	Min. Hose Inside Diameter	Air Consumption m <sup>3</sup> / min.
<b>1/4" Quick-Change Chuck</b>	<b>Nm</b>	<b>Nm</b>	<b>rpm</b>	<b>mm</b>	<b>kg</b>			
Push-to-start - push-button reverse								
2RSA-10B		0.06 - 0.9	1000	194	0.20	1/8"	3/16"	0.17
2RSA-10SB**		0.06 - 0.9	1000	162	0.20	1/8"	3/16"	0.17
19BPA02Q	0.6 - 2.1	0.6 - 2.1	2300	230	0.63	1/8"	3/16"	0.31
19BPA03Q	0.6 - 2.9	0.6 - 2.1	1600	235	0.64	1/8"	3/16"	0.31
19BPA04Q	1.1 - 4.5	1.1 - 4.3	920	230	0.61	1/8"	3/16"	0.31
19BPA05Q	1.1 - 5.1	1.1 - 4.3	560	240	0.67	1/8"	3/16"	0.31
19BPA06Q	1.1 - 5.1	1.1 - 4.3	220	240	0.68	1/8"	3/16"	0.31
Push-to-start - reversible								
19SPA02Q	0.6 - 2.1	0.6 - 2.1	2800	230	0.63	1/8"	3/16"	0.31
19SPA03Q	0.6 - 2.9	0.6 - 2.1	1900	235	0.64	1/8"	3/16"	0.31
19SPA04Q	1.1 - 4.5	1.1 - 4.3	1100	230	0.61	1/8"	3/16"	0.31
19SPA05Q	1.1 - 5.1	1.1 - 4.3	660	240	0.67	1/8"	3/16"	0.31
19SPA06Q	1.1 - 5.1	1.1 - 4.3	260	240	0.68	1/8"	3/16"	0.31
Lever push-to-start - reversible								
19SCA02Q	0.6 - 2.1	0.6 - 2.1	2800	249	0.69	1/8"	3/16"	0.31
19SCA03Q	0.6 - 2.9	0.6 - 2.1	1900	254	0.70	1/8"	3/16"	0.31
19SCA04Q	1.1 - 4.5	1.1 - 4.3	1100	249	0.66	1/8"	3/16"	0.31
19SCA05Q	1.1 - 5.1	1.1 - 4.3	660	259	0.73	1/8"	3/16"	0.31
19SCA06Q	1.1 - 5.1	1.1 - 4.3	260	259	0.74	1/8"	3/16"	0.31

\*\*Short housing

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.  
Weight does not include additional grip.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions  
Additional grip for models with more than 10 Nm torque capacity.  
All torque springs necessary to achieve the stated torque.

#### STANDARD EQUIPMENT:

Additional grip (861006)

#### OPTIONAL:

Additional accessories: See catalogue SP-1000  
Torque springs: See catalogue SP-1000

Model Number		Torque Range	Speed	Length	Weight	Air Consumption		
<b>1/4" Quick-Change Chuck</b>	<b>3/8" Square Drive</b>	<b>Nm</b>	<b>rpm</b>	<b>mm</b>	<b>kg</b>	<b>Air Inlet NPT</b>	<b>Min. Hose Inside Diameter</b>	<b>Air Consumption m<sup>3</sup> / min.</b>
8RSA-10BQ		1.7 - 7.3	800	260	1.1	1/4"	1/4"	0.54
8RSA-7BQ		1.7 - 8.5	550	260	1.1	1/4"	1/4"	0.54
8RSA-5BQ		1.7 - 8.5	400	260	1.1	1/4"	1/4"	0.54
88RSA-7CQ	88RSA-7C-3	1.7 - 10	550	241	1.2	1/4"	1/4"	0.54
88RSA-5CQ	88RSA-5C-3	1.7 - 18	400	241	1.2	1/4"	1/4"	0.54
88SA-7CQ		1.7 - 11	650	232	1.1	1/4"	1/4"	0.54
88SA-5CQ	88SA-5C-3	1.7 - 19	500	232	1.1	1/4"	1/4"	0.54
8RSAL-10BQ		1.7 - 6.8	800	302	1.3	1/4"	1/4"	0.54
88RSAL-5CQ	88RSAL-5C-3	1.7 - 18	400	282	1.4	1/4"	1/4"	0.54
35RSA-20Q		1.7 - 7	1,250	244	1.1	1/4"	5/16"	0.68
35RSA-10Q	35RSA-10-3	1.7 - 12	620	264	1.2	1/4"	5/16"	0.68
35RSA-7Q		1.7 - 18	410	264	1.2	1/4"	5/16"	0.68
35RSA-5Q	35RSA-5-3	1.7 - 20	300	264	1.2	1/4"	5/16"	0.68

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.  
Weight does not include additional grip.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions  
Additional grip for models with more than 10 Nm torque capacity.  
All torque springs necessary to achieve the stated torque.

#### STANDARD EQUIPMENT:

Additional grip (861006)

#### OPTIONAL:

Additional accessories: See catalogue SP-1000  
Torque springs: See catalogue SP-1000

# Cleco Pneumatic Pistol Grip Nutrunners

## 88 Series

Torque range: 1.7 - 20 Nm

- Quick-change chuck or square drive
- Reversible
- Trigger start and push & trigger start

## 35 Series

Torque range: 1.7 - 20 Nm

- Pistol grip
- Quick-change chuck or square drive
- Reversible
- Trigger start, push-to-start and push & trigger start



Model Number		Torque Range	Speed	Length	Weight	Air Consumption		
1/4" Quick-Change Chuck	3/8" Square Drive	Nm	rpm	mm	kg	Air Inlet NPT	Min. Hose I.D.	Air Consumption m³ / min.
Push and trigger start sliding knob reverse								
88RSAPT-7CQ		1.7 - 10	550	229	1.4	1/4"	1/4"	0.54
88RSAPT-5CQ	88RSAPT-5C-3	1.7 - 18	400	229	1.4	1/4"	1/4"	0.54
88RSAPT-2CQ		1.7 - 20	200	248	1.5	1/4"	1/4"	0.54
Sliding knob reverse								
88RSAPT-7CQ	88RSAPT-7C-3	1.7 - 10	550	225	1.4	1/4"	1/4"	0.54
88RSAPT-5CQ	88RSAPT-5C-3	1.7 - 18	400	225	1.4	1/4"	1/4"	0.54
88RSAPT-2CQ	88RSAPT-2C-3	1.7 - 20	200	245	1.5	1/4"	1/4"	0.54

### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.  
Weight does not include additional grip.

### STANDARD EQUIPMENT:

Operation and maintenance instructions  
Additional grip for models with more than 10 Nm torque capacity.  
All torque springs necessary to achieve the stated torque.

### STANDARD EQUIPMENT IF LISTED:

Additional grip (861006)

### OPTIONAL:

Additional accessories: See catalogue SP-1000  
Bits & finders: See catalogue SP-1000  
Torque springs: See catalogue SP-1000

Model Number		Torque Range	Speed	Length	Weight	Air Consumption		
1/4" Quick-Change Chuck	3/8" Square Drive	Nm	rpm	mm	kg	Air Inlet NPT	Min. Hose I.D.	Air Consumption m³ / min.
Push-to-start - sliding knob reverse								
35RSAP-10Q		2 - 12	770	251	1.5	1/4"	8"	0.68
35RSAP-7Q		2 - 18	510	251	1.5	1/4"	8"	0.68
Push and trigger - start sliding knob reverse								
35RSAPT-7Q		2 - 18	500	251	1.5	1/4"	8"	0.68
35RSAPT-5Q		2 - 20	350	251	1.5	1/4"	8"	0.68
Sliding knob reverse								
35RSATP-20Q		2 - 7	1500	229	1.4	1/4"	8"	0.68
35RSATP-10Q	35RSATP-10-3	2 - 12	750	248	1.5	1/4"	8"	0.68
35RSATP-7Q		2 - 18	500	248	1.5	1/4"	8"	0.68
35RSATP-5Q	35RSATP-5-3	2 - 20	350	248	1.5	1/4"	8"	0.68

### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.  
Weight does not include additional grip.

### STANDARD EQUIPMENT:

Operation and maintenance instructions  
Additional grip for models with more than 10 Nm torque capacity.  
All torque springs necessary to achieve the stated torque.

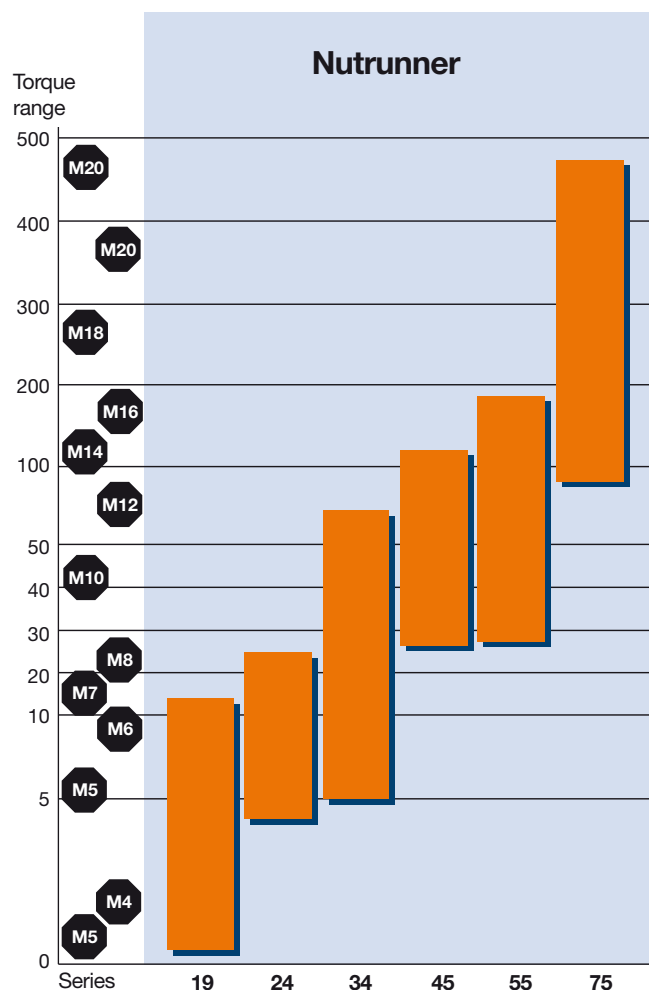
### STANDARD EQUIPMENT:

Additional grip (861006)

### OPTIONAL:

Additional accessories: See catalogue SP-1000  
Torque springs: See catalogue SP-1000

## Selecting Your Cleco Nutrunner



Cleco offers over 500 different nutrunners of which the majority can be equipped with a wide variety of drive options. As a result there are over 3000 different nutrunner combinations that make it possible to adapt the tool exactly to the requirements of the application.

The following points should be taken into account on tool selection: Ergonomic factors associated with man - tool - application, requirements on torque and speed, accessibility of the tool and the fastener, fastener variations, skills of the user and the compressed air supply.

The performance of the tool can be affected by the compressed air supply. Due to the following factors the air pressure provided to the tool may vary significantly: distance of the tool from the compressor, diameter of the supply lines, pressure drop, manifolds, hose lengths and diameters and fittings. All the performance data stated for the tools is based on an inlet pressure of 6.2 bar (90 psig) at an appropriate flow rate with the tool in operation.

### Clean Operation

The Cleco nutrunner series 24 and 34 are equipped with low-oil blades. This aspect is important for assembly tasks in which cleanliness plays an important role.



# Cleco Pneumatic Right Angle Nutrunners

**NEW!**

19RAA07AH2

24RAA11AL3

24RAA23AM3

## 19 Series

Torque range: 0.5 - 11 Nm

- Class-leading accuracy and repeatability
- External torque adjustment (Clecomatic models)
- Reversible
- 1/4" & 3/8" square drive

## 24 Series

Torque range: 4.0 - 23 Nm

- External torque adjustment (Cleomatic models)
- 3/8" square drive
- One torque spring to achieve the specified torque
- Oilless blades

## 34 Series

Torque range: 8.0 - 75 Nm

- External torque adjustment (Clecomatic models)
- 3/8" and 1/2" square drive
- Indexable angle head
- One torque spring to achieve the specified torque
- Oilless blades

## Nomenclature

	24	R	A	A	23	A	M	3
<b>Series</b>	R - Reversible						Square Drive	
19							2 - 1/4" (only AL)	
24							3 - 3/8"	
34							4 - 1/2" (only AZ)	
<b>Tool Type</b>	A - Right angle						<b>Angle Head Size</b>	
<b>Torque Control</b>							L - Light duty	
A - Clecomatic							M - Medium duty	
S - Direct output drive							H - Heavy duty	
							X - Extra heavy duty	
							Z - Super heavy duty	
<b>Max. Torque Nm</b>							<b>Tool Termination</b>	
(rounded to nearest Nm)							A - Angle head	



Model Number		Torque Range*		Speed	Length	Weight	Head Height	Side to Centre	Air Consumption		
		Tool	With Standard Spring						Air Inlet NPT	Min. Hose I.D.	Air Cons. m³ / min.
1/4" Sq. Dr.	3/8" Sq. Dr.	Nm	Nm	rpm	mm	kg	mm	mm			
19 series - reversible - Clecomatic clutch											
19RAA02AM2		0.6 - 2.1	0.6 - 2.1	2400	303	0.8	27	9	1/8"	3/16"	0.31
19RAA02AH2	19RAA02AH3	0.7 - 2.4	0.7 - 2.4	2100	316	0.8	30	13	1/8"	3/16"	0.31
19RAA03AM2		0.6 - 3.1	0.6 - 2.4	1650	310	0.8	27	9	1/8"	3/16"	0.31
19RAA03AH2	19RAA03AH3	0.7 - 3.4	0.7 - 2.7	1450	321	0.8	30	13	1/8"	3/16"	0.31
19RAA04AM2		1.4 - 4.7	1.4 - 4.7	950	305	0.8	27	9	1/8"	3/16"	0.31
19RAA05AM2		1.4 - 5.7	1.4 - 4.7	570	316	0.8	27	9	1/8"	3/16"	0.31
19RAA06AH2*	19RAA06AH3	1.5 - 6.0	1.5 - 5.4	850	316	0.8	30	13	1/8"	3/16"	0.31
19RAA07AH2*	19RAA07AH3	1.5 - 6.8	1.5 - 5.4	500	326	0.9	30	13	1/8"	3/16"	0.31
19RAA09AH2*	19RAA09AH3	2.0 - 8.5	3.4 - 8.5	500	326	0.9	30	13	1/8"	3/16"	0.31
19RAA11AH2*	19RAA11AH3	2.0 - 11.3	3.4 - 11.3	340	312	1.0	30	13	1/8"	3/16"	0.31
19RAA12AH2*	19RAA12AH3	2.0 - 11.3	3.4 - 11.3	200	326	0.9	30	13	1/8"	3/16"	0.31

\*Applications above 5.7 Nm can degrade the service life of the spindle/output drive.

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions

Torque adjusting wrench

All torque springs necessary to achieve the stated torque.

#### OPTIONAL:

Additional accessories: See catalogue SP-1000

Non-reversible kit: 207030

Signal kit for torque verifier: 301106 (only Clecomatic clutch)

Overhose: 207019

Quick-change chuck and 1/4" magnetic square drive only available for AH3 models.

Quick-change chuck: Replace AH3 with AHQ; 1/4" magnetic square drive: Replace AH3 with AHM.

Model Number		Torque Range	Speed	Length	Weight	Head Height	Side to Centre	Air Consumption		
								Air Inlet NPT	Min. Hose I.D.	Air Cons. m³ / min.
3/8" Sq. Dr.	1/2" Sq. Dr.	Nm	rpm	mm	kg	mm	mm			
24 series - reversible - Clecomatic clutch										
24RAA06AL3		4 - 5.5	2200	358	1.2	27.5	12.0	3/8"	8"	0.68
24RAA07AL3		5 - 7	1770	358	1.2	27.5	12.0	3/8"	8"	0.68
24RAA11AL3		7 - 11	1260	358	1.2	27.5	12.0	3/8"	8"	0.68
24RAA12AM3		6 - 12	1200	360	1.3	29.5	14.4	3/8"	8"	0.68
24RAA19AM3		10 - 19	700	380	1.4	29.5	14.4	3/8"	8"	0.68
24RAA23AM3		12 - 23	600	380	1.4	29.5	14.4	3/8"	8"	0.68
34 series - reversible - Clecomatic clutch										
34RAA08AL3		5.5 - 8	2060	368	1.2	27.5	12.0	3/8"	8"	0.96
34RAA11AL3		7 - 11	1675	368	1.2	27.5	12.0	3/8"	8"	0.96
34RAA15AM3		9 - 15	1185	370	1.3	29.5	14.4	3/8"	8"	0.96
34RAA26AH3		13 - 26	710	390	1.5	31.0	14.4	3/8"	8"	0.96
34RAA28AH3		14 - 28	580	390	1.5	31.0	14.4	3/8"	8"	0.96
34RAA33AX3		17 - 33	545	393	1.6	34.5	17.1	3/8"	8"	0.96
34RAA37AX3		18 - 37	480	397	1.5	34.5	17.1	3/8"	8"	0.96
34RAA47AX3		24 - 47	385	397	1.5	34.5	17.1	3/8"	8"	0.96
34RAA68AZ3		34 - 68	255	411	1.7	41.0	18.0	3/8"	8"	0.96
34RAA75AZ3		38 - 75	155	431	1.8	41.0	18.0	3/8"	8"	0.96
	34RAA68AZ4	34 - 68	255	411	1.7	41.0	18.0	3/8"	8"	0.96
	34RAA75AZ4	38 - 75	155	431	1.8	41.0	18.0	3/8"	8"	0.96

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions

Torque adjusting wrench

Adjusting tool for clutch

#### OPTIONAL:

Additional accessories: See catalogue SP-1000

Assembly wrench: 201898

Signal kit for torque verifier: 301937PT

Non-reversible kit: 204999

Exhaust overhose: 204978

# Cleco Pneumatic Right Angle Nutrunners



## 45 Series

Torque range: 28 - 115 Nm

- Button start
- Reversible and non-reversible
- External torque adjustment
- 1/2" square drive

## 55 Series

Torque range: 32 - 176 Nm

- Lever start
- Reversible and non-reversible
- External torque adjustment
- Rotating exhaust deflector
- 1/2" square drive

## 75 Series

Torque range: 95 - 430 Nm

- Lever start
- Reversible and non-reversible
- External torque adjustment
- Rotating exhaust deflector
- 1/2" & 3/4" square drive

45, 55 & 75 model number example

55 R N A L - XX X - X									
<b>Series</b> 45, 55, 75		<b>Rotation</b> N - Non-reversible R - Reversible		<b>Nutrunner</b>		<b>Start Type</b> L – Lever B – Trigger		<b>Gear</b> 2, 3, 4, 6, 7, 10	
						<b>Square Drive</b> 3 – 3/8" 4 – 1/2" 6 – 3/4"		<b>Angle Head</b> P, T, V, X	

Model Number	Torque Range	Speed	Length	Weight	Head Height	Side to Centre	Angle Head	Air Consumption		
								Air Inlet NPT	Min. Hose I.D.	Air Cons. m <sup>3</sup> / min.
1/2" Sq. Dr.	Nm	rpm	mm	kg	mm	mm				
45 series - Clecomatic clutch - button start - reversible										
45RNAB-4T-4	28 - 57	300	448	3.1	50	22	T	3/8"	3/8"	0.94
45RNAB-3P-4	35 - 71	240	445	2.9	41	18	P	3/8"	3/8"	0.94
45RNAB-3T-4	42 - 84	200	448	3.1	50	22	T	3/8"	3/8"	0.94
45RNAB-2P-4	46 - 96*	180	445	2.9	41	18	P	3/8"	3/8"	0.94
45RNAB-2T-4	50 - 115	150	448	3.1	50	22	T	3/8"	3/8"	0.94
45 series - Clecomatic clutch - button start - non-reversible										
45NAB-3P-4	38 - 77	300	445	2.8	41	18	P	3/8"	3/8"	0.94

\*The tool maximum torque exceeds the maximum torque of the output drive; increased maintenance is to be expected if the tool is operated in the upper torque range.

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions

All torque springs necessary to achieve the stated torque.

#### OPTIONAL:

Additional accessories: See catalogue SP-1000

Model Number		Torque Range	Speed	Length	Weight	Head Height	Side to Centre	Angle Head	Air Consumption		
									Air Inlet NPT	Min. Hose I.D.	Air Cons. m <sup>3</sup> / min.
1/2" Sq. Dr.	3/4" Sq. Dr.	Nm	rpm	mm	kg	mm	mm				
55 & 75 series - lever start - reversible											
55RNAL-6T-4		32 - 65	370	489	3.5	50	22	T	1/2"	1/2"	1.56
55RNAL-4P-4		35 - 73	330	486	3.3	41	18	P	1/2"	1/2"	1.56
55RNAL-4T-4		39 - 87	280	489	3.5	50	22	T	1/2"	1/2"	1.56
55RNAL-3P-4		49 - 109*	220	486	3.3	41	18	P	1/2"	1/2"	1.56
55RNAL-3T-4		58 - 129	190	489	3.5	50	22	T	1/2"	1/2"	1.56
55RNAL-2T-4		81 - 170*	140	489	3.5	50	22	T	1/2"	1/2"	1.56
75RNAL-3V-4		95 - 190	175	556	6.0	64	28	V	1/2"	1/2"	1.98
75RNAL-2V-4		122 - 255*	130	556	6.0	64	28	V	1/2"	1/2"	1.98
75RNAL-3X-6		150 - 305	110	575	6.8	70	37	X	1/2"	1/2"	1.98
75RNAL-2X-6		203 - 410	80	575	6.8	70	37	X	1/2"	1/2"	1.98
55 & 75 series - lever start - non-reversible											
55NAL-4P-4		38 - 77	480	486	3.3	41	18	P	1/2"	1/2"	1.56
55NAL-4T-4		39 - 93	400	489	3.5	50	22	T	1/2"	1/2"	1.56
55NAL-3P-4		49 - 114*	320	486	3.3	41	18	P	1/2"	1/2"	1.56
55NAL-3T-4		58 - 136	270	489	3.5	50	22	T	1/2"	1/2"	1.56
55NAL-2T-4		68 - 176*	200	489	3.5	50	22	T	1/2"	1/2"	1.56
75NAL-2V-4		135 - 271	210	556	5.9	64	28	V	1/2"	1/2"	1.98
75NAL-2X-6		215 - 430	130	575	6.7	70	37	X	1/2"	1/2"	1.98

\*The tool maximum torque exceeds the maximum torque of the output drive; increased maintenance is to be expected if the tool is operated in the upper torque range.

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions

Torque reaction mounting plate (75 series)

All torque springs necessary to achieve the stated torque.

#### OPTIONAL:

Additional accessories: See catalogue SP-1000

# Cleco Nutrunners for High Torques



45RNAB-4-3

## 45 Series Inline

Torque range: 14 - 62 Nm

- Button start
- Twist ring reverse



55RNAL-4-4

## 55 Series Inline

Torque range: 27 - 91 Nm

- Lever start
- Twist ring reverse



64TTS640D8

## 64 Series Pistol

Torque range: 34 - 3850 Nm

- Button start
- Reversible
- Swingbar



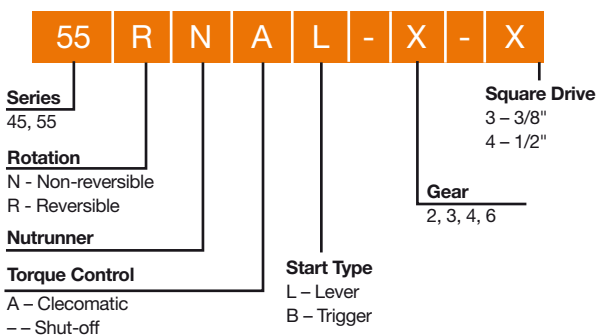
Selectork 64TTK34D4

## Selectork 64 Series

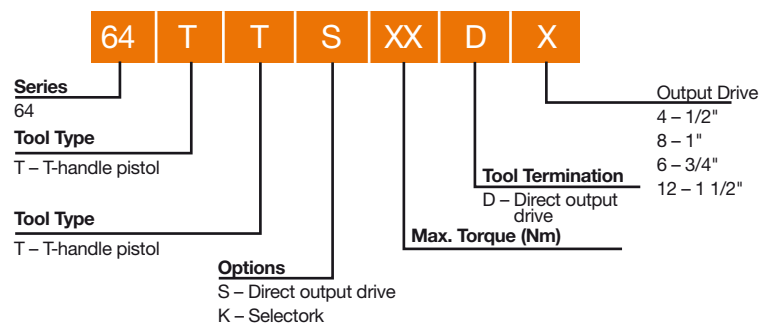
Torque range: 26 - 3850 Nm

- Pistol grip
- Reversible
- Swingbar
- Selectork adjustment permits compressed air regulation at the tool for the individual situation from a common air line

### 45 & 55 model number example



### 64 model number examples





Model Number	Torque Range	Drive Size	Free Speed	Length	Weight*	Air Consumption		
	Nm		rpm	mm	kg	Air Inlet NPT	Min. Hose I.D.	Air Cons. m³ / min.
45 Series - inline - Clecomatic - trigger start - twist ring reverse								
45RNAB-6-3	14 - 22	3/8	740	368	2.4	3/8"	10"	0.94
45RNAB-4-3	19 - 30	3/8	560	368	2.4	3/8"	10"	0.94
45RNAB-3-3	24 - 45	3/8	370	368	2.4	3/8"	10"	0.94
45RNAB-2-4	31 - 62	1/2	270	368	2.4	3/8"	10"	0.94
55 Series - inline - Clecomatic - lever start - twist ring reverse								
55RNAL-4-4	27 - 46	1/2	560	410	3.0	1/2"	13"	1.56
55RNAL-3-4	34 - 69	1/2	370	410	3.0	1/2"	13"	1.56
55RNAL-2-4	46 - 91	1/2	270	410	3.0	1/2"	13"	1.56

\*Weight without reaction bar.

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions  
Aluminium torque reaction bar.

#### OPTIONAL:

Steel torque reaction bar: 869770  
Additional accessories: See catalogue SP-1000

Model Number		Torque Range	Drive Size	Free Speed	Length	Weight*	Air Consumption		
Notn- Selectork	Selectork	Nm		rpm	mm	kg	Air Inlet NPT	Min. Hose I.D.	Air Cons. m³ / min.
Pistol - trigger start - reversible									
64TTS34D4	64TTK34D4	26 - 34	1/2"	725	291	2.9	3/8"	1/2"	1.70
64TTS44D4	64TTK44D4	33 - 44	1/2"	570	291	2.9	3/8"	1/2"	1.70
64TTS55D4	64TTK55D4	41 - 55	1/2"	445	291	2.9	3/8"	1/2"	1.70
64TTS75D4	64TTK75D4	56 - 75	1/2"	340	291	2.9	3/8"	1/2"	1.70
64TTS90D4	64TTK90D4	68 - 90	1/2"	270	291	2.9	3/8"	1/2"	1.70
64TTS110D4	64TTK110D4	83 - 110	1/2"	225	291	2.9	3/8"	1/2"	1.70
64TTS125D4	64TTK125D4	94 - 125	1/2"	200	291	2.9	3/8"	1/2"	1.70
64TTS140D4	64TTK140D4	105 - 140	1/2"	180	291	2.9	3/8"	1/2"	1.70
64TTS150D6	64TTK150D6	113 - 150	3/4"	160	316	3.7	3/8"	1/2"	1.70
64TTS175D6	64TTK175D6	131 - 175	3/4"	135	316	3.7	3/8"	1/2"	1.70
64TTS205D6	64TTK205D6	154 - 205	3/4"	115	316	3.7	3/8"	1/2"	1.70
64TTS255D6	64TTK255D6	191 - 255	3/4"	95	316	3.7	3/8"	1/2"	1.70
64TTS345D6	64TTK345D6	259 - 345	3/4"	70	316	3.7	3/8"	1/2"	1.70
64TTS425D6	64TTK425D6	319 - 425	3/4"	55	316	3.7	3/8"	1/2"	1.70
64TTS570D6	64TTK570D6	428 - 570	3/4"	42	329	3.9	3/8"	1/2"	1.70
64TTS640D8	64TTK640D8	480 - 640	1"	32	404	6.6	3/8"	1/2"	1.70
64TTS750D8	64TTK750D8	563 - 750	1"	27	404	6.6	3/8"	1/2"	1.70
64TTS930D8	64TTK930D8	698 - 930	1"	22	404	6.6	3/8"	1/2"	1.70
64TTS1260D8	64TTK1260D8	945 - 1260	1"	16	404	6.6	3/8"	1/2"	1.70
64TTS1475D8	64TTK1475D8	1106 - 1475	1"	14	404	6.6	3/8"	1/2"	1.70
64TTS1820D8	64TTK1820D8	1365 - 1820	1"	11	404	6.6	3/8"	1/2"	1.70
64TTS1985D8	64TTK1985D8	1489 - 1985	1"	10	404	6.6	3/8"	1/2"	1.70
64TTS3850D12	64TTK3850D12	2888 - 3850	1 1/2"	5	546	14.6	3/8"	1/2"	1.70

\*Weight without reaction bar.

#### GENERAL:

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Operation and maintenance instructions  
Aluminium torque reaction bar.  
Steel torque reaction bar (tool above 67 Nm)  
Bucking bar collar with handle (64TTS3850D12 & 64TTK3850D12)

#### OPTIONAL:

Steel torque reaction bar: for 64...D4 tools: 48047128  
Additional accessories: See catalogue SP-1000

# Cleco Pneumatic Tube Nut Wrenches

## 24 Series

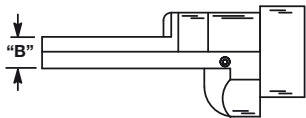
Torque range: 14 - 40 Nm

- One hand, two position throttle
- External torque adjustment
- Auto alignment socket

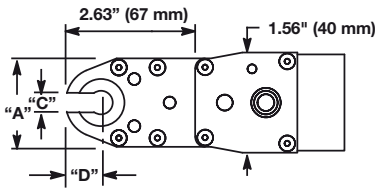


### Dimensions

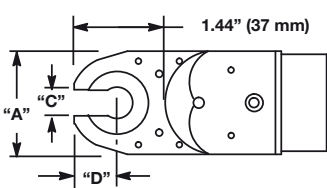
#### T2, T3 & T4 Head Height



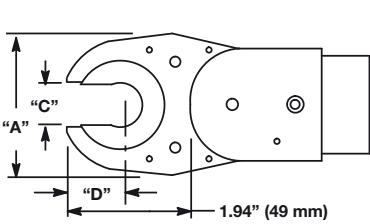
#### T2 Head



#### T3 Head



#### T4 Head



Model Number	Speed rpm	Torque Range Nm	Weight kg	Length mm	Socket Size mm	"A" mm	"B" mm	"C" mm	"D" mm
Drive									
24RTA12	670	5 - 12	1.2	305	NA	NA	NA	NA	NA
Drive with attachment									
24RTA20T2	240	14 - 20	2.0	426	---	36	14	7.0	13.5
24RTA30T3	175	20 - 30	2.0	426	---	42	15	11.9	18.5
24RTA40T4	130	26 - 40	2.3	449	---	60	15	17.0	23.5

\*Varies with socket size.

GENERAL:  
Air inlet tube NPT 1/4"  
Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

OPTIONAL:  
For the appropriate socket refer to catalogue SP-1000.  
Signal kit for torque verifier: 301937PT (see catalogue SP-1000)

NOTE: The models listed are examples. Use the table on the following page for models that are not listed.

## Automatic Alignment

Tube and hose applications that in the past were only feasible using hand tools can now be tightened using the Cleco family of tube nut wrenches. This operation takes place at a speed that significantly increases your productivity.

Torque repetition accuracy is assured by the proven Clecomatic clutch and motor that does not fatigue. These models use a single lever for tightening with the nutrunner and for returning the socket to the initial position. The flexibility, combined with the proven capabilities, significantly increases the production rate on your assembly line.



Make sure the socket is in the open position. If this is not the case, push the lever down half way to return the socket to the open position.



Push the tool on the fastener and push the lever down fully to tighten the fastener.



To release the tool again, move the tool away from the fastener and press the lever half way to return the socket to the open position.

## Model Number Example

Base tool						Socket (to be ordered separately)				
24	R	T	A	20	T2	KS2	ED	0	0	
<b>Motor</b> 24						<b>Head Size</b> KS2 - T2 KS3 - T3 KS4 - T4				<b>Output Drive</b> 0 Partial thru hex 1 Thru hex 3 Double thru hex 4 Partial double thru hex
<b>Tool Type</b> R - Reversing mechanism for socket alignment						<b>Extension</b> 0 None 4 1/2" 2 1/4" 6 3/4"				
<b>Tool Type</b> T - Tube nut wrench						<b>Max. Square Socket Size</b> MG, 1/2" T2 head type MM, 3/4" T3 head type MU, 1 1/16" T4 head type 00, ## (special), T3 head type				
<b>Torque Control</b> A - Clecomatic clutch						<b>Socket Size</b>				
<b>Max. Torque (Nm)</b> T2 - 20 Nm T3 - 30 Nm T4 - 40 Nm						EA - 1/4"	M5 - 5 mm	MK 17 mm		
<b>Head Size</b> T2 - 20 Nm max. T3 - 30 Nm max. T4 - 40 Nm max.						EC - 3/8"	M6 - 6 mm	ML - 18 mm		
						ED - 7/16"	MA - 7 mm	MM - 19 mm		
						EE - 1/2"	MB - 8 mm	MN - 20 mm		
						EF - 9/16"	MD - 10 mm	MO - 21 mm		
						EH - 11/16"	ME - 11 mm	MP - 22 mm		
						EJ - 13/16"	MF - 12 mm	MQ - 23 mm		
						EK - 7/8"	MG - 13 mm	MR - 24 mm		
						EL - 15/16"	MH - 14 mm	MS - 25 mm		
						EM - 1"	MI - 15 mm	MT - 26 mm		
						EO - 1 1/8"	MJ - 16 mm (5/8")	MU - 27 mm (1 1/16")		

NOTE: When you order, state the base tool and order the socket separately. The socket will be mounted on the tool prior to shipment.

# Cleco Pneumatic Crowfoot Nutrunners



### 24 & 34 Series

Torque range: up to 68 Nm

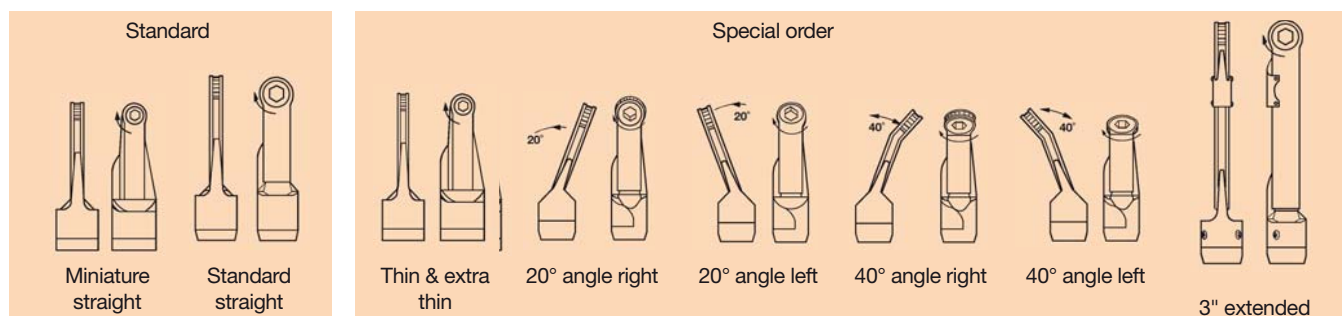
- "Stall" version
- Non-reversible

Cleco 24/34 series model number example

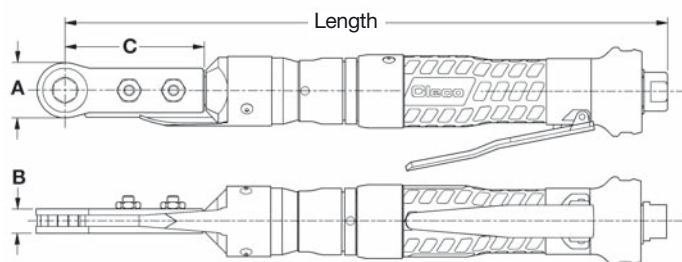
24 N R S XX H XX										
<b>Tool Series</b> 24 34								<b>Ratchet Head Size</b> ("A" dimension on next page)		
								12	16	25
<b>Tool Type</b> N – Non-reversible								13	18	29
								15	20	37
<b>Tool Type</b> R – Lever start										
								<b>Ratchet Head Type*</b>		
<b>Torque Control</b> S – Direct output drive								A – Miniature straight	P – 20° angle right	
								H – Standard	R – 20° angle left	
								K – Thin	Q – 40° angle right	
								J – Extra thin	T – 40° angle left	
<b>Max. Torque</b> (rounded to nearest Nm)								L – 3" extended		

\*For a complete list of attachments consult the parts list PL17-RA.





Other head types are available. Please contact your Apex Tool Group distributor.



Model Number	Speed rpm	Max. Torque Nm	Max. Socket Size mm	"A" mm	"B" mm	"C" mm	Length mm	Weight kg
<b>24 Series</b>								
24NRS15A13	265	15	11	20.6	12.7	73.2	340	1.2
24NRS15A12	285	15	10	19.0	12.7	73.2	340	1.2
24NRS20H15	305	20	13	23.8	14.2	79.5	356	1.3
24NRS21H16	285	21	16	25.4	14.2	79.5	356	1.3
24NRS23A13	145	23	11	20.6	12.7	73.2	361	1.3
24NRS23H15	170	24	13	23.8	14.2	79.5	376	1.4
24NRS23H20	250	24	19	31.8	14.2	79.5	361	1.4
24NRS24H16	155	24	16	25.4	14.2	79.5	376	1.4
24NRS24H18	265	24	16	28.6	14.2	79.5	358	1.4
24NRS24A12	155	25	10	19.0	12.7	73.2	361	1.3
24NRS29H18	145	29	16	28.6	14.2	79.5	378	1.5
24NRS29H25	180	29	24	39.7	14.2	82.5	366	1.4
24NRS30H20	135	30	19	31.8	14.2	79.5	378	1.5
<b>34 Series</b>								
34NRS29H15	255	29	13	23.8	14.2	79.5	406	1.7
34NRS31H16	240	31	16	25.4	14.2	79.5	406	1.7
34NRS35H20	210	35	19	31.8	14.2	79.5	411	1.7
34NRS36H18	225	36	16	28.6	14.2	79.5	409	1.7
34NRS36H15	155	36	13	23.8	14.2	79.5	427	1.8
34NRS38H16	145	38	16	25.4	14.2	79.5	427	1.8
34NRS42H25	150	42	24	39.7	14.2	82.5	417	1.7
34NRS46H20	125	46	19	31.8	14.2	79.5	432	1.8
34NRS46H18	135	46	16	28.6	14.2	79.5	429	1.8
34NRS48H29	140	48	29	46.0	15.9	88.9	429	1.8
34NRS52H25	90	52	24	39.7	14.2	82.5	437	1.8
34NRS53H37	120	53	41	59.5	15.9	95.3	439	2.0
34NRS63H29	85	63	29	46.0	15.9	88.9	450	1.9
34NRS68H37	70	68	41	59.5	15.9	95.3	460	2.1

#### GENERAL:

Air inlet tube NPT 1/4"

Tool performance data measured at 6.2 bar inlet air pressure at the air inlet tube.

#### STANDARD EQUIPMENT:

Suspension bail "Socket with standard internal hexagon"

SELECTION OF THE SOCKETS:

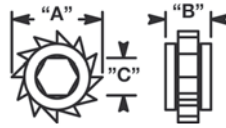
See catalogue SP-1000

# Cleco Pneumatic Assembly Tool Ratchet Sockets

## Standard Length Series

### H16, H30, 41 (no additional cost)

Selection table for sockets  
with internal hexagon



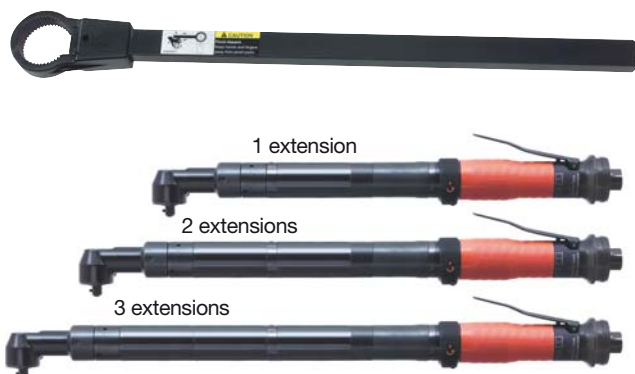
Code		12	13	15	16	18	20	25	29	37
"A"		3/4	13/16	15/16	1	1-1/8	1-1/4	1-9/16	1-13/16	2-11/32
"B"		1/2	1/2	9/16	9/16	9/16	9/16	9/16	5/8	5/8
"C"	Hex	Socket Order No.								
1/4 inch	S.H.	28000	28020	28048	28075					
1/4 inch	D.H.	28001	28021	28051						
9/32 inch	S.H.	28012								
5/16 inch	S.H.	28002	28022	28040	28056		28101	28135		
5/16 inch	D.H.	28003	28023	28052	28078		28124			30434
11/32 inch	S.H.	28004	28024		28074	28097	28102			
11/32 inch	D.H.	28005								
3/8 inch	S.H.	28006	28026	28041	28057	28094	28160			
3/8 inch	D.H.	28007	28027	28042	28058		28123	28166		
7/16 inch	S.H.	28009†	28029	28043	28060	28081	28105	28136	28192	30418
7/16 inch	D.H.	28010†	28030	28044	28061	28082	28106	28137		30435
1/2 inch	S.H.		28031†	28046	28063	28083	28108	28139	28170	30423
1/2 inch	D.H.		28032†	28047	28064	28084	28109	28140		
9/16 inch	S.H.				28066	28087	28111	28141	28171	30432
9/16 inch	D.H.				28067	28088	28112	28142	28189	
5/8 inch	S.H.				28069†	28090	28115	28144	28172	
5/8 inch	D.H.				28070†	28091	28116	28145	28190	30431
11/16 inch	S.H.						28118	28146	28173	30433
11/16 inch	D.H.						28119	28147		
3/4 inch	S.H.						28121	28148	28174	30429
3/4 inch	D.H.						28122	28149	28191	
13/16 inch	S.H.							28150	28175	
13/16 inch	D.H.							28151		
7/8 inch	S.H.							28154		30427
7/8 inch	D.H.							28155		
15/16 inch	S.H.							28156	28179	30430
15/16 inch	D.H.								28180	30434
1 inch	S.H.								28181	30428
1 inch	D.H.								28182	
1-1/16 inch	S.H.								28183	30436
1-1/16 inch	D.H.								28184	
1-1/8 inch	S.H.								28185	30417
1-1/8 inch	D.H.								28187	
1-3/16 inch	S.H.									30425
1-1/4 inch	S.H.									30419
1-5/16 inch	S.H.									30426
1-7/16 inch	S.H.									30420
1-1/2 inch	S.H.									30421
1-1/2 inch	D.H.									30437
1-5/8 inch	S.H.									30422
6 mm	S.H.	28016	28033	28055						
7 mm	S.H.	28017	28034	530440			28126	28163		
8 mm	S.H.	28002	28022	28040	28056					
8 mm	D.H.	28003	28023		28078					
9 mm	S.H.				28071					
9 mm	D.H.		28037							
10 mm	S.H.	28008	28028	28054	28059	28093	28104	28164		
11 mm	S.H.	28009	28029	28043	28060	28081		28136	530460	
12 mm	S.H.			28045	28062		28107	28138		
13 mm	S.H.		28036	28053	28077	28096	28125	28161	530461	
14 mm	S.H.			530441	28065	28086	28110	28159		
15 mm	S.H.				28068	28089	28113	28143	530462	532431
15 mm	D.H.				28080	28095				
16 mm	S.H.					28099		28167		
17 mm	S.H.					28092	28117	28158	28193	
18 mm	S.H.						28120	28165		30439
19 mm	S.H.						28121	28148	28174	30429
19 mm	D.H.						28122	28149	28191	
21 mm	S.H.							28152		
22 mm	S.H.							28162		
23 mm	S.H.								28178	
24 mm	S.H.							28168		
29 mm	S.H.								28188	

S.H. = Single hex; D.H. = Double hex

† Thin walled: only for tasks with low load.

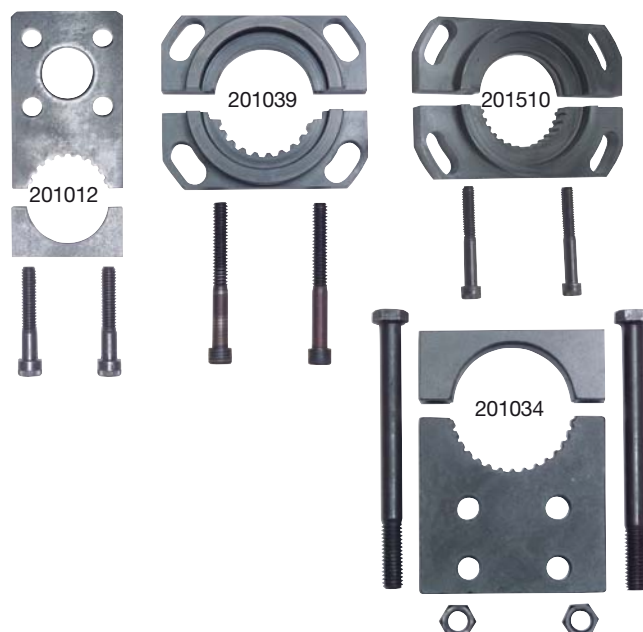
## Torque Reaction Bar

Part Number	Description	Used On...
869770	Steel bar	45, 55 Series inline
48047128	Steel bar	64...D4
46037081	Bucking bar collar with handle	64...D4
46177030	Bucking bar collar with handle	64...D6
46607058	Bucking bar collar with handle	64...D8



## Torque Reaction Mounting Plate

Part Number	Description	Used On...
201012	Torque reaction plate	45, 55 Series
201039	Fixed tool plate	45, 55 Series
201510	Torque reaction plate	75 Series
201034	Torque reaction plate	75 series (standard)



## Extension Kit (3.5")

Part Number	Used On...
301081	34 Series (37 Nm or more)
301108	24/34 Series (36 Nm or less)

## Angle Head Covers

Part Number	Used On...	
	Tool Series	Angle Head
205831	24/34	AH, AM
205833	24/34	AX
205834	24/34	AZ
205837	19	AH
205839	45/55	T
205835	45/55	P
205838	75	V



## Suspension Bail

Part Number	Used On...
867711	8, 35, 45, 55 Series
204987	24, 34 wire bail



## Assembly Wrench

Part Number	Used On...
201898	Two required



## Torque Verifier Kit Air Signal for Clutch Shut-Off

Part Number	Used On...
201900	24/34 Series Clecomatic (old version)
301937PT	24/34 Series Clecomatic (new version)
301106	19 Series Clecomatic



## Rotating Suspension Bail

Part Number	Used On...
541715-5	24, 34 Series
54397004	64...D4
46437006	64...D6
46607016	64...D8
46037036	64...D12



## Joint Simulator

Description	Torque Range	Width	Height	Length	Part Number
	Nm	mm	mm	mm	
Joint simulator	300 - 15	264	406	667	550006



550006

# The Cleco H Series Pulse Nutrunners in Action



### When Speed Counts

Fastening an axial piston motor using a Cleco H Series pulse nutrunner without shut-off



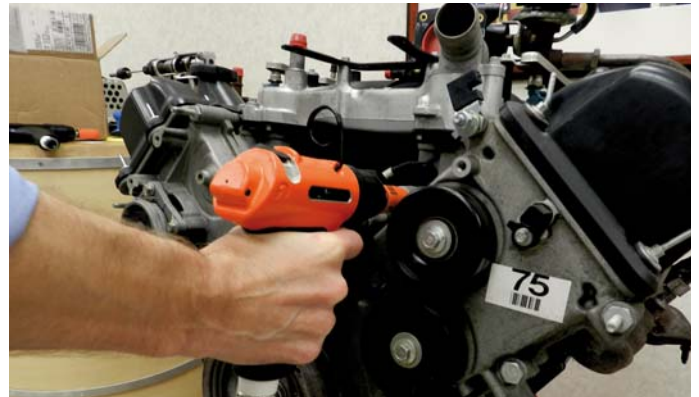
35PHH653

### Critical Fastening Cases

Fastening motor attachments using Cleco H Series pulse shut-off nutrunner



55PTHH403



### If Accuracy Is Required

Fastening plugs to a pump using a Cleco H Series pulse shut-off nutrunner



35PTHH403



### Reaction-Free Production

Fastening transformers using Cleco inline pulse shut-off nutrunner



7STHFC55Q





## Durable. Economical. Low Maintenance.

### Unbeatable Performance

We are constantly improving our products to guarantee you optimal productivity. The new Cleco H Series combines legendary service life with unmatched repeatability. Using this tool you can complete every joint quickly and reliably. Select the appropriate pulse nutrunner from the comprehensive range of shut-off and stall-type nutrunners. Due to the maximum performance with low weight you will no longer put it down.

50% lower air consumption with no load due to the innovative centrifugal regulator that only releases the full performance under load.

Level gauge for reserve oil level.

The highly precise shut-off is similar to the behaviour of electrical tools with a tolerance in the range of +/- 10% at six sigma.

A completely newly developed pulse unit provides market-leading repetition accuracy in hard and soft fastening cases.

The reserve oil flows automatically. It is possible to fill the reserve container in a few seconds during maintenance.

The powerful 3-chamber air motor reduces your fastening time due to increased motor torque and useful high-end dynamic performance. The unique design minimises the wear on the blades.

Reduced maintenance effort minimises your downtimes. The new Cleco H Series will provide you with up to 500,000 fastening cycles before the first service.

The leading motor design combined with the newly developed housing provides excellent ergonomics. Less vibration permits longer usage by the operator.

Adjust the number of pulses to your fastening cases and fasten even more accurately (shut-off models). As this pulse nutrunner is as quiet as a whisper it ensures pleasant working.

Connection feature for a torque verifier.

# Cleco H Series Pulse Nutrunner Specifications

	Model Number	Output Drive	Bolt Size	Torque Range (Nm)	Free Speed (rpm)	Weight (kg)	Side to Centre (mm)	Length (mm)	Air Consumption No-Load/ Pulses (m <sup>3</sup> /min)	Noise No-Load (dB(A))	Vibration (m/s <sup>2</sup> )	Hose Size
W I T H  S H U T - O F F	H Series											
	7PTHH352 7PTHHA352	1/4" sq.dr.	M5	4 - 7	3500	0.79 0.88	21	168	0.10 / 0.20	< 72	< 1.0	3/8"
	7PTHH35Q 7PTHHA35Q	1/4" QC	M5	4 - 7	3500	0.79 0.89	21	173	0.10 / 0.20	< 72	< 1.0	3/8"
	11PTHH352 11PTHHA352	1/4" sq.dr.	M6	6 - 11	3500	0.82 0.88	21	168	0.10 / 0.20	< 72	< 1.0	3/8"
	11PTHH35Q 11PTHHA35Q	1/4" QC	M6	6 - 11	3500	0.85 0.91	21	173	0.10 / 0.20	< 72	< 1.0	3/8"
	11PTHH353* 11PTHHA353*	3/8" sq.dr.	M6	6 - 11	3500	0.83 0.89	21	173	0.10 / 0.20	< 72	< 1.0	3/8"
	20PTHH40Q 20PTHHA40Q	1/4" QC	M7	10 - 20	4000	0.87 0.93	21	173	0.10 / 0.25	< 75	< 1.0	3/8"
	20PTHH403* 20PTHHA403*	3/8" sq.dr.	M7	10 - 20	4000	0.86 0.92	21	173	0.10 / 0.25	< 75	< 1.0	3/8"
	35PTHH40Q 35PTHHA40Q	1/4" QC	M8	20 - 35	4000	1.05 1.11	24	179	0.15 / 0.45	< 76	< 1.0	3/8"
	35PTHH403* 35PTHHA403*	3/8" sq.dr.	M8	20 - 35	4000	1.05 1.11	24	179	0.15 / 0.45	< 76	< 1.0	3/8"
	55PTHH403* 55PTHHA403*	3/8" sq.dr.	M10	30 - 55	4000	1.15 1.21	24	189	0.15 / 0.45	< 77	< 1.0	3/8"
	80PTHH35Q 80PTHHA35Q	7/16" QC	M10	50 - 80	3500	1.45 1.51	28.5	192	0.20 / 0.55	< 77	< 1.0	3/8"
	80PTHH354 80PTHHA354	1/2" sq.dr.	M10	50 - 80	3500	1.40 1.50	28.5	190	0.20 / 0.55	< 77	< 1.0	3/8"
	110PTHH30Q 110PTHHA30Q	7/16" QC	M12	75 - 110	3000	1.70 1.75	28.5	210	0.20 / 0.55	< 78	< 1.0	1/2"
	120PTHH304 120PTHHA304	1/2" sq.dr.	M12	75 - 120	3000	1.70 1.75	28.5	208	0.20 / 0.55	< 78	< 1.0	1/2"
C Series												
	140PTH25Q	7/16" QC	M12	100 - 140	2500	2.6	36	251	0.28 / 0.72	< 77	< 2.5	1/2"
	160PTH256	3/4" sq.dr.	M16	100 - 160	2500	2.6	36	245	0.25 / 0.72	< 77	< 2.5	1/2"
	250PTHFC226	3/4" sq.dr.	M16	160 - 250	2200	4.0	42	261	0.4 / 0.95	< 76	< 2.5	1/2"
	400PTHFC206	3/4" sq.dr.	M18	250 - 400	2000	5.3	48	279	0.6 / 1.2	< 82	< 2.5	1/2"
PTHHA = Air from top; Q/QC = Quick-change chuck: sq. dr. = Square drive; * = 7/16" quick-change chuck available separately as accessory												



**160PTH256 pulse nutrunner**  
with 100Nm - 160Nm



**400PTHFC206 pulse nutrunner**  
with 250Nm - 400Nm

NON SHUT- OFF	Model Number	Output Drive	Bolt Size	Torque max. (Nm)	Free Speed (rpm)	Weight (kg)	Side to Centre (mm)	Length (mm)	Air Consumption No-Load (m³/min)	Noise No-Load (dB(A))	Vibration (m/s²)	Hose Size
	7PHH602 7PHHA602	1/4" sq.dr.	M5	7	6000	0.77 0.82	21	168	0.25	< 74	< 1.6	3/8"
	7PHH60Q 7PHHA60Q	1/4" QC	M5	7	6000	0.79 0.84	21	173	0.25	< 74	< 1.6	3/8"
	11PHH653* 11PHHA653*	3/8" sq.dr.	M6	11	6500	0.79 0.84	21	173	0.30	< 75	< 1.7	3/8"
	11PHH652 11PHHA652	1/4" sq.dr.	M6	11	6500	0.78 0.84	21	168	0.30	< 75	< 1.7	3/8"
	11PHH65Q 11PHHA65Q	1/4" QC	M6	11	6500	0.80 0.89	21	173	0.30	< 75	< 1.7	3/8"
	20PHH753* 20PHHA753*	3/8" sq.dr.	M7	20	7500	0.84 0.88	21	173	0.35	< 76	< 1.8	3/8"
	20PHH75Q 20PHHA75Q	1/4" QC	M7	20	7500	0.86 0.92	21	173	0.35	< 76	< 1.8	3/8"
	35PHH653* 35PHHA653*	3/8" sq.dr.	M8	35	6500	1.02 1.07	24	179	0.55	< 79	< 1.8	3/8"
	35PHH65Q 35PHHA65Q	1/4" QC	M8	35	6500	1.04 1.10	24	179	0.55	< 79	< 1.8	3/8"
	55PHH603* 55PHHA603*	3/8" sq.dr.	M10	55	6000	1.12 1.17	24	189	0.65	< 80	< 1.8	3/8"
	80PHH604 80PHHA604	1/2" sq.dr.	M10	80	6000	1.40 1.45	28.5	190	0.75	< 80	< 2.0	3/8"
	80PHH60Q 80PHHA60Q	7/16" QC	M10	80	6000	1.42 1.47	28.5	192	0.75	< 80	< 2.0	3/8"
	110PHH55Q 110PHHA55Q	7/16" QC	M12	110	5500	1.67 1.72	28.5	210	0.85	< 80	< 2.0	1/2"
	120PHH554 120PHHA554	1/2" sq.dr.	M12	120	5500	1.65 1.70	28.5	208	0.85	< 80	< 2.0	1/2"

PHHA = Air from top; Q/QC = Quick-change chuck; sq. dr. = Square drive; \* = 7/16" quick-change chuck available separately as accessory

ACCESSORIES	Model Number	Description
	935472	7/16" quick-change chuck for 11/20/35/55PTHH/PTHHA/PHH/PHHA
	935965	Vibration absorber for 35/55PTHHA/PHHA
	935966	Vibration absorber for 80/110/120PTHHA/PHHA
	936695PT	Filling set reserve oil
	934918	Signal connection kit for torque verifier TVP110
	TVP-110-30-D (230V)*	Torque verifier; 2.72kg; W x H x D 222 x 232 x 105 mm
	937442PT	Protective cover for 7/11/20PTHHA/7/11/20PHHA
	937443PT	Protective cover for 35PTHHA/35PHHA
	937444PT	Protective cover for 55PTHHA/55PHHA
	937445PT	Protective cover for 80PTHHA/80PHHA
	937446PT	Protective cover for 110/120PTHHA/110/120PHHA
	937447PT	Protective cover for 7/11/20PTHH/7/11/20PHH
	937448PT	Protective cover for 35PTHH/35PHH
	937449PT	Protective cover for 55PTHH/55PHH
	937450PT	Protective cover for 80PTHH/80PHH
	937451PT	Protective cover for 110/120PTHH/110/120PHH

\* = Includes power cable, air signal transducer, an 8 m cable for the connection of the air signal transducer as well as a 2.3 m air line for the connection of the transducer to the tool. NOTE: Tool must be equipped with the signal kit for TVP-110.

## Cleco WL & WP Series Impact Wrenches

### WL & WP Series

Torque range:  
20 - 2,450 Nm

Bolt size:  
M10 - M30

- Lever and trigger start
- Reversible



WL-200-3



WP-255-3P



WP-2049-6



WP-455-4P

### WT Series with Spade Handle

Torque range:  
1,000 - 4,000 Nm

Bolt size:  
M30 - M36

- Trigger start
- Second handle
- Reduced maintenance due to oil bath lubrication
- Reversible



WT-2109-8



# Cleco WL & WP Series Impact Wrench Specifications



Model Number	Bolt Size	Square Output Drive	Torque Range	Impacts per Minute	Free Speed	Length	Weight	Side to Centre	Air Consumption		
	Size								Torque Range	Min. Hose Size	Air Cons. m³ / min.
	mm										
Inline - lever start											
WL-200-3	M10	3/8	20 - 68	3200	3000	216	1.4	25	1/4"	1/4"	0.51
WL-200-4	M10	1/2	20 - 81	3200	3000	216	1.5	25	1/4"	1/4"	0.51
Pistol grip - trigger control											
WP-255-3P	M10	3/8	80 - 100	1150	9500	145	1.2	25	1/4"	1/4"	0.85
WP-455-4R	M20	1/2	50 - 502	1400	6500	176	2.4	---	1/4"	1/4"	1.13
WP-455-4P**	M20	1/2	50 - 502	1400	6500	176	2.4	---	1/4"	1/4"	1.13
WP-2050-6	M20	3/4	170 - 800	1000	6000	162	3.5	42	3/8"	3/8"	1.27
WP-2060B-6	M24	3/4	350 - 950	1000	4000	197	5.4	46	3/8"	3/8"	1.70
WP-2060B-8	M24	1	350 - 1200	1000	4000	197	5.5	46	3/8"	3/8"	1.70
WP-2110B-8	M30	1	1000 - 2250	880	4600	241	9.4	56	1/2"	3/8"	2.83
Pistol grip - trigger control - with higher reverse power***											
WP-2049-6	M20	3/4	170 - 750	1000	6200	162	3.5	42	3/8"	3/8"	1.27
WP-2059-6	M24	3/4	350 - 950	1000	4000	197	5.4	46	3/8"	3/8"	1.70
WP-2059-8	M24	1	350 - 1,100	1000	4000	197	5.5	46	3/8"	3/8"	1.70
WP-2109B-8	M30	1	1000 - 2250	880	4300	241	9.4	56	1/2"	3/8"	2.83

General information:  
Tool performance data  
measured at 6.2 bar inlet air  
pressure at the air inlet tube.

Optional equipment:  
86909 Locking pin for WL-200  
Additional accessories:  
See catalogue SP-1000

Standard equipment:  
Operating manual and  
maintenance instructions

\*\*Square drive with sprung pin

\*\*\*With increased breakaway torque in reverse

2049 Series: 750 ft.-lbs. (1000 Nm)

2059 Series: 1200 ft.-lbs. (1600 Nm)

2109 Series: 2500 ft.-lbs. (3400 Nm)

Model Number	Suitable for Bolt Size	Square Output Drive	Torque Range	Impacts per Minute	Free Speed	Length	Weight	Side to Centre	Air Consumption		
Inside Trigger									Torque Range	Min. Hose Size	m³/min.
	mm	Inch	Nm		rpm	mm	kg	mm			
Trigger control - spade handle											
WT-2110-8	M30	1	1000 - 2250	880	4600	327	9.5	56	1/2"	1/2"	2.83
WT-2120-12	M36	1 1/2	1600 - 4000	850	3300	362	12.5	59	1/2"	5/8"	2.97
Trigger control - spade handle - with higher reverse power*											
WT-2109-8	M30	1	1000 - 2,250	880	4300	327	9.5	56	1/2"	1/2"	2.83
WT-2119-12	M36	1 1/2	1600 - 3500	820	3300	362	13.1	59	1/2"	5/8"	2.97

General information:  
Tool performance data  
measured at 6.2 bar inlet air  
pressure at the air inlet tube.

Optional equipment:  
Yoke for second handle  
Second handle

Standard equipment:  
Operating manual and  
maintenance instructions

Additional accessories:  
See catalogue SP-1000

2109 Series: 2500 ft.-lbs. (3400 Nm)

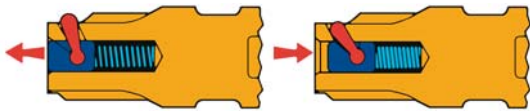
2119 Series: 3500 ft.-lbs. (4700 Nm)

\*With increased breakaway torque in reverse

## A New Generation of Impact Wrenches

### Patented Positive Locking Socket Retainer

The socket engages in the patented positive locking socket retainer (U.S. patent 3.890.051) and is retained until released. As the retainer is connected to the tool via a spline, it can be maintained without dismantling the tool.



### Assembly Using Through Screws Reduces the Spare Part Costs



The end of the output drive made of steel and the motor, the housing and the handle are connected by four high-strength steel screws. This special feature improves the tool performance and brings an end to stripped threads and loose parts inside the motor housing.

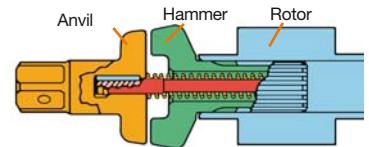
### Forced Lubrication Using Oil Foam Reduces the Most Common Maintenance Task on Impact Wrenches



Cleco impact wrenches use a unique oil foam bath for the forced lubrication of the hammer, anvil and other moving parts. The system is designed so that the tool shuts-off if there is a shortage of oil in the impact mechanism. This aspect removes one of the main causes for the failure of impact wrenches: lack of lubrication. The tool can be ready for use again by simply topping up with oil.

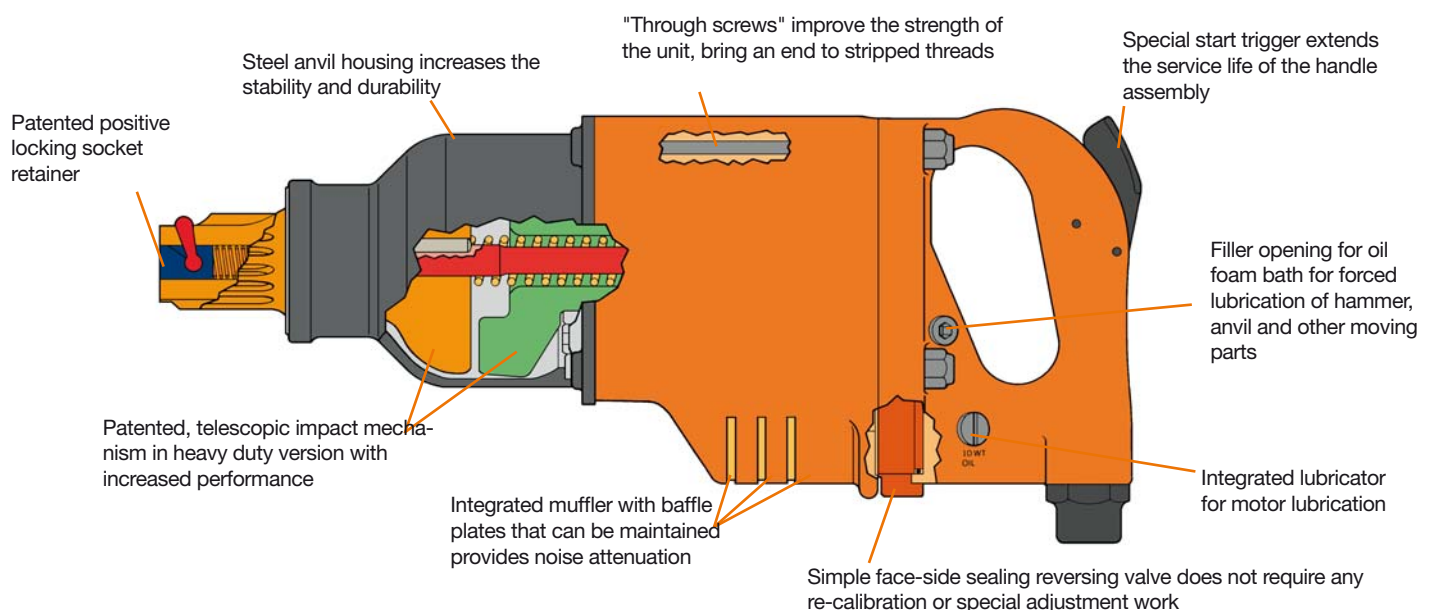
### Proven, Patented Impact Mechanism Increases the Performance, Reduces the Weight and Lowers the Shock for the User

The softly impacting telescopic impact mechanism on the Cleco wrench is patented (U.S. patent 3.156.3340). It comprises only three main components – hammer, anvil and rotor – and as a result applies more force directly to the fastening element. The hammer is connected to the rotor via a spline. It impacts directly on the anvil, as a result the force applied with each impact increases.



### Further Important Features:

- Comfortable grip handle
- Models with outside and inside trigger and pistol grip
- Second handle that can be placed in any position and spade-shaped handle, type "D", available
- Trigger with regulator function for speed control
- Simple, face-sealing reversing valve eases maintenance
- Forged hammer and anvil with higher durability
- Rotor bearing rings and motor end plates made of steel are identical on both ends of the motor; as a result low parts inventory and repair time.



The Series TVP-100 torque verifier provides low-cost certainty during assembly for pneumatic, rotating and pulsing nutrunners.

The new Cleco torque verifiers TVP-100 improve the assembly process as user errors due to releasing the trigger too early, stripping the screw thread or re-hits are indicated.

The Series TVP-100 is designed for usage with pneumatic Cleco shut-off nutrunners and Cleco pulse shut-off nutrunners with torque verifier kit.

The Series TVP-100 provides optical and acoustic feedback both for individual fastening parameters and for fastening groups and in this way ensures that each element is correctly and completely fastened.

Building on the TME controller technology from Cleco, the user interface on the series TVP-100 permits straightforward setup and operation of the tool.

The Series TVP-100 measures the fastening sequence on the pneumatic tool connected.

Deviations from a normal fastening sequence due to re-hits, stripping threads, prematurely releasing the trigger or a number of other variables result in an acoustic and optical NOK signal from the verifier that notifies the operator of the error. While the measuring and control electronics TME111 check the tool and therefore the fastening process, the Series TVP-100 represents a cost-effective option for checking the shut-off process.



# Cleco Torque Verifier Specifications



## Features

- Check nutrunner settings with optical and acoustic OK/NOK indication
- On-screen check on the individual nutrunner status with count function
- Graphic indication with a graph for each fastening
- Saves 1,000 processes
- Sequence control feature
- 8 parameter sets available for different applications
- "Auto Cal" permits quick, straightforward tool set-up for different fastening types
- Password-protected
- Different languages can be selected

### TVP-100 Torque Verifier

Model Number		Language	Weight	Width	Height	Depth
115VAC*	230VAC*		kg	mm	mm	mm
TVP-110-15-U	TVP-110-30-U	English	2.72	222	232	105
TVP-110-15-D	TVP-110-30-D	German	2.72	222	232	105
TVP-110-15-S	TVP-110-30-S	Spanish	2.72	222	232	105
TVP-110-15-P	TVP-110-30-P	Portuguese	2.72	222	232	105

\*230VAC units are CE certified.  
All model numbers include power cable, air signal transducer, 8 metre cable for connection of the TVP to air signal transducer and 2.3 metre air line for connection of the transducer to the tool.  
NOTE: The tool must be equipped with a signal kit for the torque verifier.

24 V inputs/outputs:  
Inputs: Up to 8 applications  
Batch accept  
Reject  
Outputs: Cycle accept  
OK indication  
NOK indication



## Torque Verifier Kits

Part Number	For the Tools...
301106	19SCA & 19RAA Series
302021PT	19TTA & 19PTA Series
201900	24RAA & 34RAA Series (old version)
301937PT	24RAA & 34RAA Series (new version)
934918	PTH Series pulse nutrunners (C & D & H Series)

## Cable for Dig. I/O

Part Number	Description
941195-100	Connection cable for digital I/O, 12 PIN round connector to flying lead, length 10 m

## Cable

Part Number	Description
207237	115 V transducer and cable
207238	230 V transducer and cable

\*115V and 230V transducer and cable assemblies have different connectors for the TVP on the end of the cable.

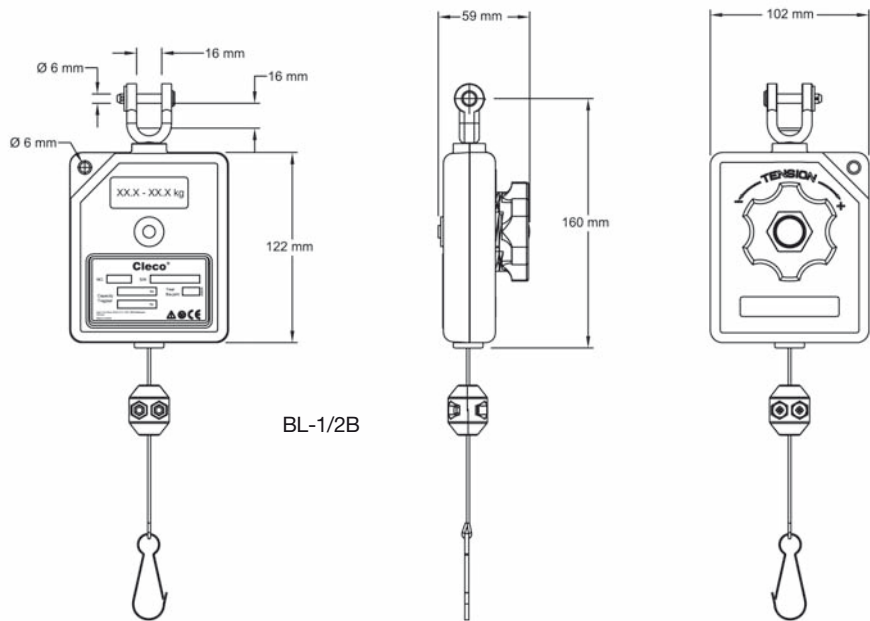


Load Capacity Range 0.5 - 1.8 kg

- Impact-resistant plastic housing
- Resilient, durable spring
- Mounting eye can be rotated 360°
- Mounting point for safety chain
- Adjustable cable stop
- Adjustment of the spring tension using external rotary knob
- Nylon rope



BL-2B

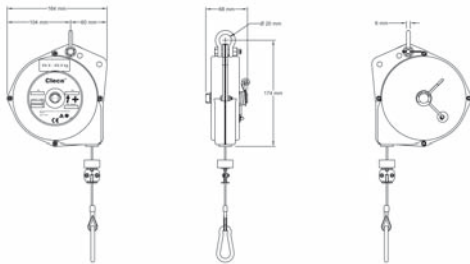


BL-1/2B

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BL-1B	0.5 - 0.9	1.6	0.43
BL-2B	0.8 - 1.8	1.6	0.43

## Load Capacity Range 0.4 - 2.3 kg

- Steel housing, colour orange RAL2004
- Adjustable cable stop permits adjustment of tool to the required height
- Cable diameter 2.5 mm
- Option: 939597 safety chain (L=0.38 m)



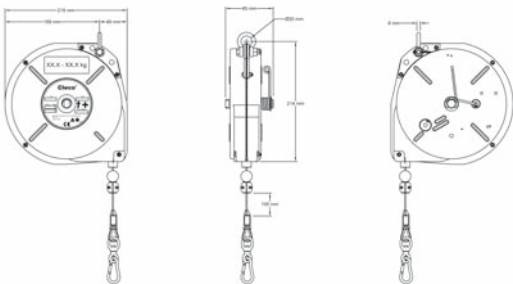
BL-3B



BL-3B

## Load Capacity Range 1.8 - 10 kg

- Steel housing, colour orange RAL2004
- Spring break protection
- Adjustable cable stop permits adjustment of tool to the required height
- Carabiner hook can be rotated 360°
- Cable diameter 2.5 mm
- Option: 939597 safety chain (L=0.38 m)



BL-5C / 7C / 10C



BL-7C

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BL-3B	0.4 - 2.3	2.4	1.8
BL-5C	1.8 - 4.5	2.4	3.8
BL-7C	3.6 - 6.8	2.4	3.8
BL-10C	7.3 - 10.0	2.4	4.2

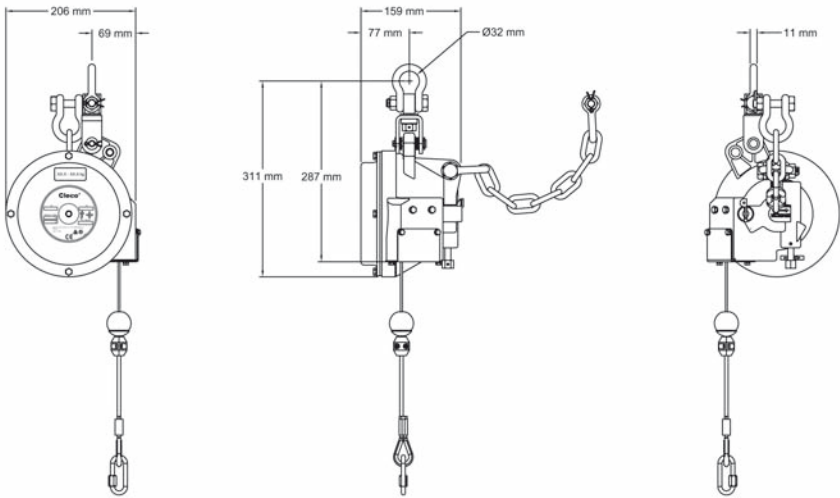
# Cleco Balancers BM Series

## Load Capacity Range 2.3 - 30 kg

- Aluminium housing
- Spring break protection
- Adjustable cable stop permits adjustment of tool to the required height
- Manual drum locking
- Coated cable drum against wear
- Mounting bar can be rotated 360°
- Cable diameter 3.0 mm
- Option: 939536 safety chain



BM-14B



BL-5B / 9B / 14B / 18B / 23B / 30B

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BM-5B	2.3 - 5.0	1.8	7.4
BM-9B	5.0 - 9.0	1.8	7.4
BM-14B	9.0 - 14.0	1.8	7.4
BM-18B	13.0 - 18.0	1.8	7.4
BM-23B	18.0 - 23.0	1.8	7.4
BM-30B	23.0 - 30.0	1.8	7.4

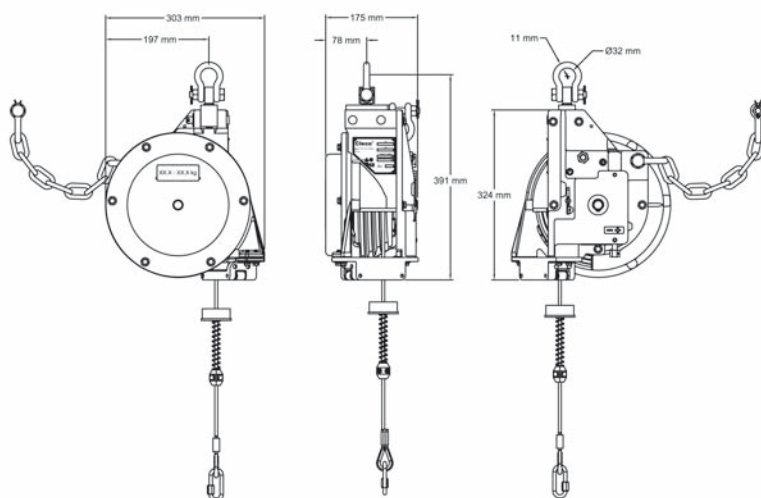


## Load Capacity Range 31 - 45 kg



BH-39B

- Aluminium housing
- Spring break protection
- Adjustable cable stop permits adjustment of tool to the required height
- Manual drum locking
- Coated cable drum against wear
- Mounting bar can be rotated 360°
- Cable diameter 5.0 mm
- Option: 939536 safety chain



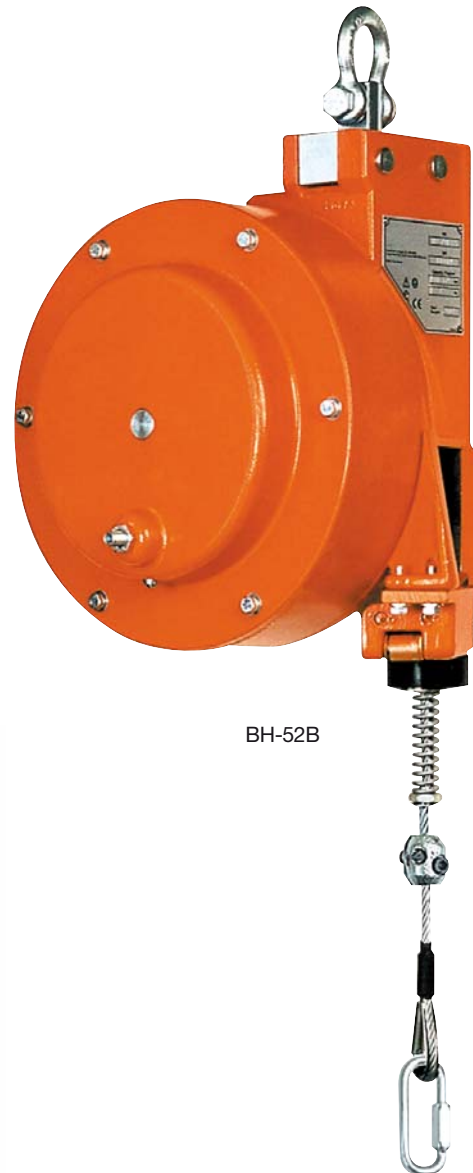
BH-39B / 41B / 45B

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BH-39B	31.0 - 39.0	2.1	17
BH-41B	36.0 - 41.0	2.1	17
BH-45B	40.0 - 45.0	2.1	17

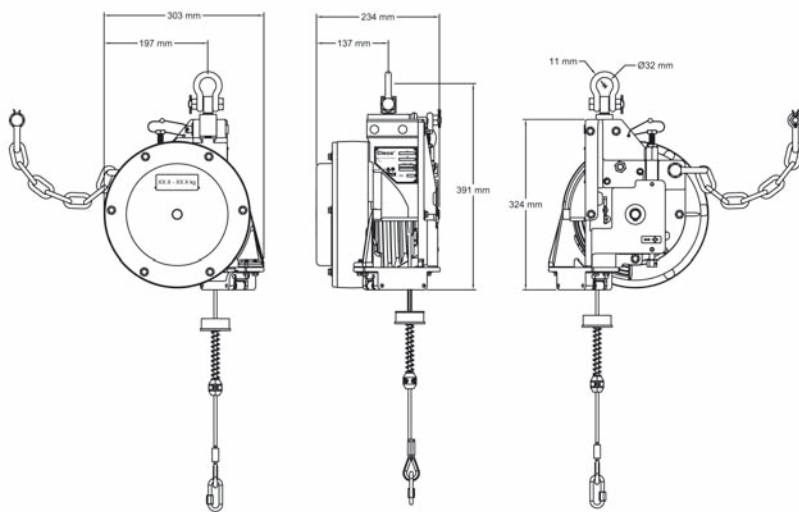
## Load Capacity Range 38.3 - 91 kg

- Two-spring model
- Aluminium housing
- Spring break protection
- Adjustable cable stop permits adjustment of tool to the required height
- Manual drum locking
- Coated cable drum against wear
- Mounting bar can be rotated 360°
- Cable diameter 5.0 mm

Option: 939536 safety chain



BH-52B



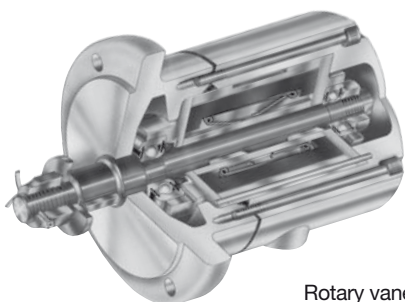
BL-52B / 57B / 66B / 75B / 79B / 91B

Recommendable:

Additional securing using safety chain/rope

Model Number	Load Capacity	Rope	Weight
	kg	m	kg
BH-52B	38.3 - 52.0	2.1	24
BH-57B	52.0 - 57.0	2.1	24
BH-66B	56.0 - 66.0	2.1	24
BH-75B	65.0 - 75.0	2.1	24
BH-79B	72.0 - 79.0	2.1	24
BH-91B	79.0 - 91.0	2.1	24

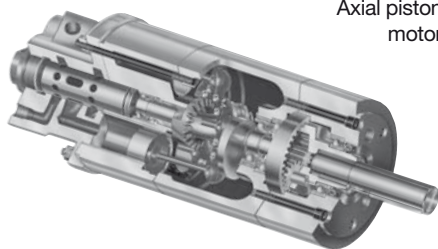
## Select the Right Pneumatic Power Motor for Your Application



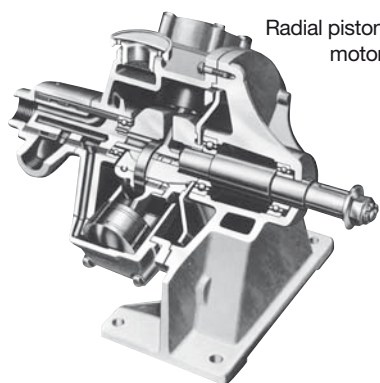
Rotary vane  
motors



Axial piston  
motor



Radial piston  
motor



The Apex Tool Group's pneumatic power motors have been developed for flexibility and reliability. Cleco pneumatic power motors cover a wide range of applications where compressed air is advantageous: powering compressed air machinery, raising foundry copes and drags, rotating a turntable, mixing paint, powering cranes, actuating valves or as a power source for mechanical gripper arms or universal joints

### Rotary Vane Motor\*

The Apex Tool Group offers two types of these motors, the large Cleco MR Series (1.0 to 7.5 HP) with spring-loaded blades and small to medium sizes (0.14 to 2.3 HP). All motors have been designed for durability with precision heavy-duty bearings and multiple blade rotors for smooth power. There is a wide range of speeds and torques as well as a selection of foot, face, or flange mountings. These motors require compressed air line lubrication for long, trouble-free service. Install the lubricator as close as possible to the motor. These motors operate satisfactorily even in environments with high temperatures up to 200° F (93° C).

### Axial Piston Motor\*

These small, light Cleco motors are ideal for installation in tight spaces. The rugged design and precision manufacturing of these motors permit long service life with minimum maintenance. Generously sized spindle bearings permit an overhung weight on spindle with no external support.

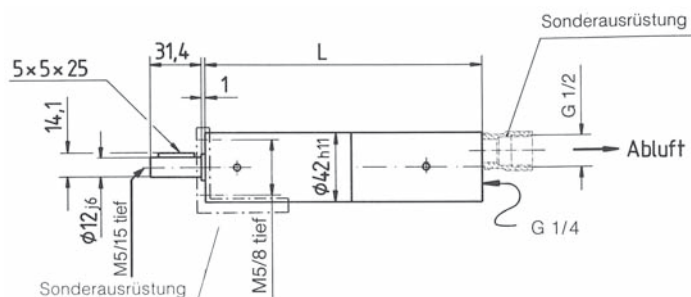
High torques are an inherent characteristic of compressed air piston motors, a feature that makes them very attractive for applications that required high starting loads. The overlapping of power impulses in axial piston motors permits even torque and full power in both directions of rotation. These motors should be operated under load and horizontally. Axial piston motors are ideal for start-stop operation. It is not recommended to operate them at speeds greater than 75% of free speed. Their enclosed design permits usage in corrosive or dusty environments. These motors operate satisfactorily even in environments with high temperatures up to 200° F (93° C). Lubrication nipples are provided for

lubrication. It is recommended to equip compressed air lines with filters and lubricators. Install the lubricator as close as possible to the motor.

### Radial Piston Motor\*

The heavy-duty design makes these motors suitable for continuous operation. The balanced crankshaft is mounted on roller bearings. An oil slinger ring distributes oil to all moving parts of the motor. Oil level and drain plugs are easily accessible.

High torques are an inherent characteristic of compressed air piston motors, a feature that makes them very attractive for applications that require high starting loads. The overlapping of power impulses in radial piston motors permits even torque and full power in both directions of rotation. At least two pistons are always on a power stroke. These motors should be operated under load and horizontally. It is not recommended to operate them at speeds greater than 75% of free speed. The motors operate satisfactorily even in environments with high temperatures up to 200° F (93° C). It is recommended to equip compressed air lines with lubricators. Install the lubricator as close as possible to the motor.



Technical drawing of a shaft assembly. The drawing shows a shaft with a total length  $L$ . Key dimensions and features include:

- Top left:  $5 \times 5 \times 32$  (likely a key or washer).
- Top left dimension:  $39,9$  (distance from the left end to the start of the main shaft section).
- Top left dimension:  $1$  (width of a small step or feature).
- Left side dimension:  $18,1$  (height of the left flange or support).
- Left side dimension:  $\phi 16,6$  (diameter of the left flange).
- Left side label:  $M6/15$  tief (thread specification for the left flange).
- Left side label:  $\phi 55_{+0,11}$  (diameter of the main shaft section).
- Bottom left label:  $M6/12$  tief (thread specification for the main shaft section).
- Bottom left label:  $\phi 55_{+0,11}$  (diameter of the main shaft section).
- Right side dimension:  $G 1/4$  (thread specification for the right flange).
- Right side dimension:  $G 1/2$  (thread specification for the right flange).
- Right side label:  $\text{Abluft}$  (exhaust air outlet).
- Bottom left label:  $\text{Sonderausr\"ustung}$  (special equipment).
- Bottom right label:  $\text{Sonderausr\"ustung}$  (special equipment).

Technical drawing of a 1000mm long, 26mm wide extruded aluminum profile. The profile features a 5x5x20mm slot on the left end, a 12mm wide section, and a 1mm wide section. The main body is 4x50mm. The right end has a G1/4 thread and a G1/2 thread. The drawing includes dimensions for the slot, the main body, and the threaded sections. The total length is 1000mm. The drawing is labeled '1000' and '26'.

Technical drawing of a 3D-printed part with the following dimensions and labels:

- Top left: 6x6x50
- Top left vertical dimension: 24.5
- Top left horizontal dimension: 56
- Top center horizontal dimension: 6
- Top right horizontal dimension: 1/8 tief
- Top right horizontal dimension: L
- Bottom left vertical dimension:  $\phi 22_{+0.5}^{-0.5}$
- Bottom left horizontal dimension: M6/15 tief
- Bottom center horizontal dimension:  $\phi 60/6 \times M8$
- Bottom center horizontal dimension:  $\phi 72_{H11}$
- Bottom center horizontal dimension: R
- Bottom center horizontal dimension: L
- Bottom center horizontal dimension:  $G 1/8''$
- Bottom center horizontal dimension:  $G 3/8''$
- Bottom center horizontal dimension:  $\phi 77$
- Bottom right horizontal dimension: PG29
- Bottom right horizontal dimension: Abluft
- Bottom right horizontal dimension: Sonderausrüstung

92



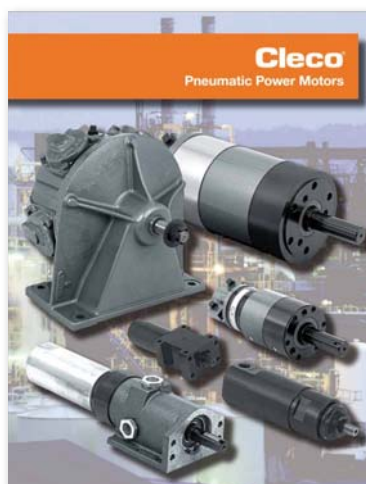
## Power Class 0.06–1.10 kW

Highest Power		Speed	Stall Torque	Air Consumption Full Load**	Noise level free speed	Max. Load Output Drive Spindle		Length	Weight	Type Series	Order Number
						Radial	Axial				
kW	rpm	rpm	Nm	m³/min.	dB(A)	N	N	mm	kg		
Non-reversible (clockwise rotating)											
0.06	2150	4300	0.6	0.16	67	80	40	171	0.48	8MZ	8MZN502M
0.06	1250	2500	0.9	0.16	67	100	50	171	0.48	8MZ	8MZN503M
0.06	675	1350	1.7	0.16	67	120	60	184	0.53	8MZ	8MZN504M
0.06	400	800	2.8	0.16	67	140	70	184	0.53	8MZ	8MZN505M
0.06	240	480	4.8	0.16	67	170	85	184	0.53	8MZ	8MZN506M
Reversible											
0.06	2150	4300	0.6	0.16	67	80	40	171	0.48	8MZ	8MZR507M
0.06	1250	2500	0.9	0.16	67	100	50	171	0.48	8MZ	8MZR508M
0.06	675	1350	1.7	0.16	67	120	60	184	0.53	8MZ	8MZR509M
0.06	400	800	2.8	0.16	67	140	70	184	0.53	8MZ	8MZR510M
0.06	240	480	4.8	0.16	67	170	85	184	0.53	8MZ	8MZR511M
Reversible											
0.32	2350	4700	2.6	0.41	79	200	100	154	0.75	15MZ	15MZR359M
0.29	1090	2180	5.0	0.41	79	250	125	154	0.75	15MZ	15MZR360M
0.22	725	1450	6.0	0.41	79	290	145	169	0.85	15MZ	15MZR361M
0.22	415	830	10.4	0.41	79	350	175	169	0.85	15MZ	15MZR362M
0.22	230	460	17.6	0.41	79	430	215	169	0.85	15MZ	15MZR363M
Reversible											
0.45	1830	3660	4.7	0.56	77	420	210	215	1.64	25MZ	25MZR149M
0.45	1000	2000	8.6	0.56	77	500	250	215	1.64	25MZ	25MZR151M
0.41	570	1140	13.7	0.56	77	580	290	215	1.68	25MZ	25MZR155M
0.41	325	650	24.2	0.56	77	715	360	215	1.68	25MZ	25MZR157M
0.41	190	380	41.0	0.56	77	840	420	215	1.68	25MZ	25MZR159M
Reversible											
0.38	175	350	42	0.46	79	1050	525	194	1.84	25MZV	25MZVR624M
0.35	125	250	53	0.46	79	1180	590	194	1.85	25MZV	25MZVR625M
Reversible											
1.10	1400	2800	13.0	0.90	77	660	330	237	3.10	35MZ	35MZR385M
1.10	600	1200	32.0	0.90	76	860	430	237	3.10	35MZ	35MZR386M
1.10	300	600	65.0	0.90	76	1100	550	261	3.50	35MZ	35MZR387M
1.10	155	310	130.0	0.90	76	1400	700	261	3.50	35MZ	35MZR388M
Reversible with speed regulation											
0.55	75	150	123	0.80	72	1800	900	261	3.50	35MZ	35MZR389M
0.35	52	104	91	0.75	71	2100	1050	261	3.50	35MZ	35MZR390M
0.08	23	46	40	0.55	70	2500	1250	261	3.50	35MZ	35MZR391M

\*\*Air consumption in unloaded state.

All performance data stated on this page relate to 6 bar inlet air pressure.

You will find the complete range of pneumatic power motors online in the full catalogue SP-104 at [www.apexpowertools.eu](http://www.apexpowertools.eu)



Cleco  
Pneumatic Power Motors ...

Catalogue: SP-104



# Cleco Electrical Assembly Tools Overview

Cleco fastening technology is used worldwide and in all industries. This technology is used in aerospace, automotive, environment, wind energy, agriculture and a great number of different applications in general industry where quality critical requirements are the rule. The complete product portfolio of transducer-based electric tools from the Cleco and DGD brands is used worldwide for safety critical applications in the automotive industry where exact precision and traceability are required. And finally, our range of DC electric tools is used in one of the most demanding environments, aircraft assembly, where "good enough" is never acceptable.

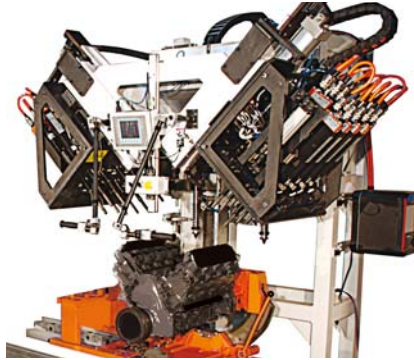
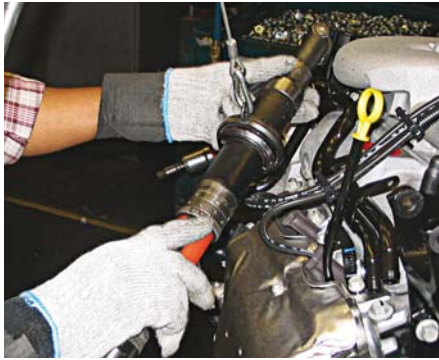
Because of our emphasis on perfection, you can surpass yourself. Our customers view us as strategic partners and not purely as vendors, as we have an unusual focus on com-

plete fastening solutions instead of just on the product. And in the Apex Tool Group we welcome the challenge of market leadership that this approach brings.

## The Systems

Cleco's exemplary fastening systems provide unmatched performance, productivity and responsibility in quality and safety critical assembly applications.

Long service life, speed and ergonomics are achieved with the corded Cleco DC electric tools with a complete product range of tool configurations and a range of controller options.





The Cleco LiveWire™ system offers the most cost-effective fastening solution for safety-critical applications available worldwide. The combination of cordless tools with WLAN communication gives the operator the necessary mobility and flexibility for higher productivity and reduces costs due to system damage. The controller, which can manage up to 16 cordless tools, utilises the latest wireless encryption technology and in the process provides unmatched cost savings in industry.

If the cumulative effects of all these components is taken into consideration – the tools, the controllers, the software, the flexibility, the accessories and the support – you can clearly see why Cleco fastening systems set the standards for all DC electric tool systems.

## Applications

<b>Accuracy</b> ↑ Process control	<b>Safety critical</b>	Electric hand-held nutrunners with transducer	Torque accuracy with traceability
	<b>Quality-critical</b>	Current control tools Pneumatic pulse nutrunners/clutch shut-off	Productivity/quality control
	<b>Application</b>	<b>Solution</b>	<b>Requirements</b>



# Durability. Speed.

Cost-effective solution for maximum performance in quality-critical applications.

The electrical assembly tools from Cleco with current control are more mature than the compressed air tools with pneumatic clutch and torque verifier available on the market. The patented current control systems from Cleco impress with higher productivity, more sophisticated error detection and increased flexibility in use.

Our control systems are recognised worldwide as a first-class software interface. And that not only due to their straightforward operation, but also due to the basic programming features, programming graphics and process feedback in real-time. Our latest development ("Auto. Program") takes the guesswork out of programming. Simply enter the torque shut-off value for the product group and the software automatically compiles the program for the production application.



Unrestricted  
speed control



Adjustable angle heads  
permit flexible orientation.





# Ergonomics.

Why current control instead of pneumatic clutch?

## Higher Productivity

- Up to 2 to 3-times faster
- Unrestricted speed control
- Up to 25 % less noise
- Cleaner working environment
- Automatic torque programming
- Proven durability in use

## Better Error Detection

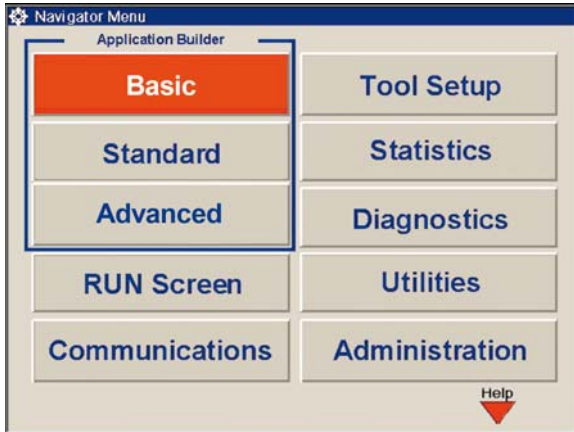
- Counter display with 96 positions
- LED with 9 tools for the operator
- 8 configurable I/O
- Prepared for fieldbus
- Memory for 5,000 tightening stages
- Expanded system diagnostics
- Barcode product group selection

## High Process Flexibility

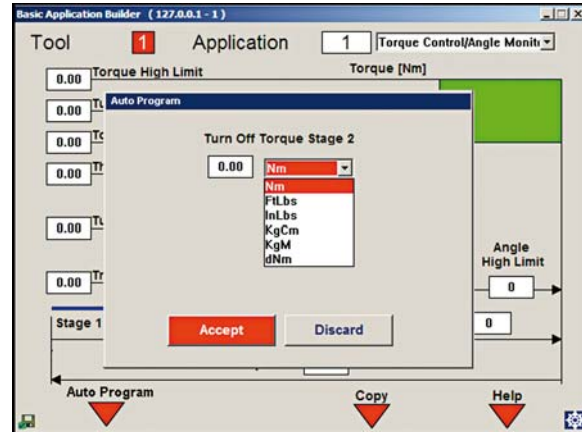
- 255 programmable fastening processes
- 6 configurable stages per process
- Angle of rotation process control/monitoring
- Process control of the fastening process also counter clockwise
- Low maintenance effort – no clutch
- 100 m cable length

Easy to setup: 1-2-3-go!

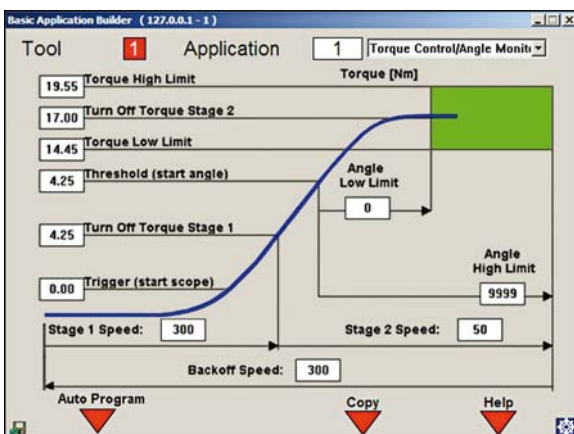
1. Select "Basic" on the menu.



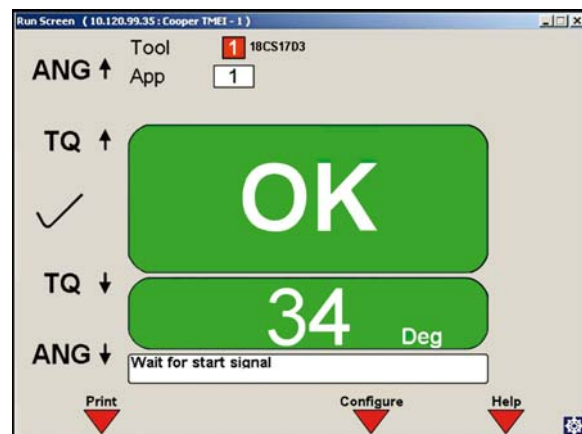
2. Enter the final torque.



3. The tool is programmed automatically



Go! Ready for production.

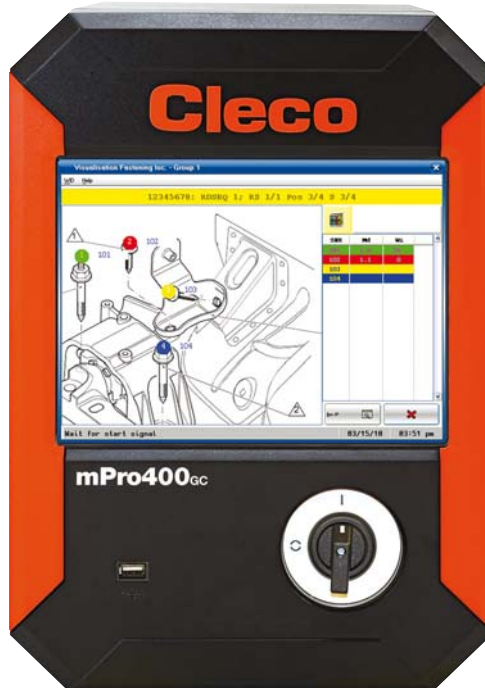


# Cleco Global Controller Overview

## mPro400GC Global Controller

- Graphic user interface
- Fully programmable
- Local storage of up to 10,000 fastening operations
- LAN support
- Fieldbus options available

Master/primary controller



Secondary controller



MPro400GC-M



MPro400GC-P



MPro400GC-S

## mPro400GC-SG Global Controller

The mPro400GC-SG controller provides the same capabilities and functions as the mPro400GC-M controller with the additional benefit of panel mounting.



Model	Description	Tool Compatibility	Weight	Width	Height	Depth
			kg	mm	mm	mm
MPro400GC-P	Primary	Cleco 18 & 48 Series, Cleco LiveWire, DGD Intelligent Spindle*	13.9	261.62	378.46	327.66
MPro400GC-S	Secondary	Cleco 18 & 48 Series	12.7	261.62	378.46	327.66
MPro400GC-M	Master	Cleco LiveWire, DGD Intelligent Spindle*	10.6	261.62	378.46	327.66
MPro400GC-SG	Panel mounting	Cleco LiveWire, DGD Intelligent Spindle, 1, 2, 3, 4				

\*A quotation is necessary to be able to take into account the hardware configuration.

NOTE: 17/47/67 and matrix versions of the 18/48 Series tools require the isolating transformer 544185PT for use with primary/secondary controllers. Mounting panel can be used for various control cabinet solutions.



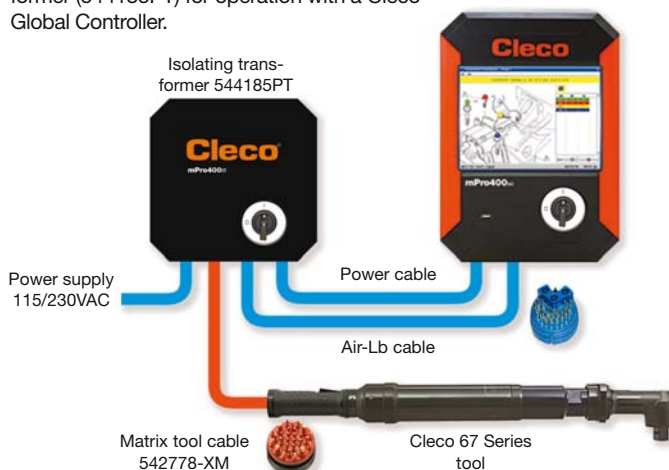
## Torque Monitoring mPro400GC-E & mPro400GC-I Global Controller

- Single channel
- Economical
- Remote programming
- Local storage of up to 5,000 fastening operations
- LAN support
- Input voltage 115/230VAC
- Connectors:  
1x serial  
1x TM-COM  
1x Ethernet
- Inputs/outputs:  
8x 24 V inputs, 8x 24 V outputs



MPro400GC-E & MPro400GC-I

All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



Model	Description	Tool Compatibility	Weight	Width	Height	Depth
			kg	mm	mm	mm
MPro400GC-E	Economy	Cleco 18 & 48 E_E Series*	14.8	261.62	378.46	327.66
MPro400GC-I	Current shutdown	Cleco 18 & 48 C_E Series**	14.8	261.62	378.46	327.66

\*NOTE: 17/47/67 and matrix versions of the 18/48 Series tools require the isolating transformer 544185PT for use

\*\*NOTE: 48 Series tools require 230 VAC.

STANDARD EQUIPMENT:  
TM-COM remote programming software, null modem serial cable and crossover Ethernet cable

# Cleco Corded Right Angle Nutrunners with Transducer

## Right Angle Series

Torque range 2 - 230 Nm  
Bolt size M5 - M16

- Brushless motor
- High-resolution resolver
- Integrated transducer
- Memory chip with all relevant tool data



XX	E	A	E	XXX	XXX	X
<b>Motor Supply</b> 18, 48 E - Electrical		<b>Connector</b> E Air-LB		<b>Locking</b> Pin locking B - Ball locking		<b>Output Drive</b>
<b>Tool Type</b> A - Right angle		<b>Max. Torque (Nm)</b> Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.		AL2 - 1/4" sq. dr.    AM4 - 1/2" sq. dr. AL3 - 3/8" sq. dr.    AH4 - 1/2" sq. dr. AM3 - 3/8" sq. dr.    MH4 - 1/2" sq. dr. AX6 - 3/4" sq. dr.		

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Angle Head	
						Side to Centre	Height
	Nm	rpm	kg		mm	mm	mm
18EAE08AL2	2 - 8	3000	1.3	1/4"	345	13	36
18EAE15AM3	4 - 15	1300	1.5	3/8"	376	15	41
18EAE22AM3	5 - 22	920	1.5	3/8"	376	15	41
18EAE28AM3	6 - 28	700	1.5	3/8"	376	15	41
48EAE15AL3	3 - 15	2855	1.7	3/8"	398	15	41
48EAE28AL3	6 - 28	1300	1.9	3/8"	410	15	41
48EAE41AM3	9 - 41	1090	2.0	3/8"	440	19	48
48EAE58AM3	12 - 58	770	2.0	3/8"	440	19	48
48EAE58AM4	12 - 58	770	2.0	1/2"	440	19	48
48EAE90AH4	18 - 87	515	3.0	1/2"	470	21	58
48EAE105AH4	21 - 104	340	3.0	1/2"	470	21	58
48EAE135MH4	27 - 133	265	3.3	1/2"	485	24	61
48EAE175AX6	36 - 176	190	4.6	3/4"	549	27	69
48EAE230AX6	46 - 230	145	4.6	3/4"	549	27	69

\*Weights do not include tool cable or reaction bar.

GENERAL:  
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:  
Air-LB connector. Ball locking optional  
Tool available with matrix connector on request.

OPTIONAL:  
Standard tool cable 961259-XX, RA rotating cable 961260-XX,  
straight rotating cable 961251-XX, extension cable 961249-XX.  
Additional accessories: See catalogue SP-1020.



## Right Angle Series

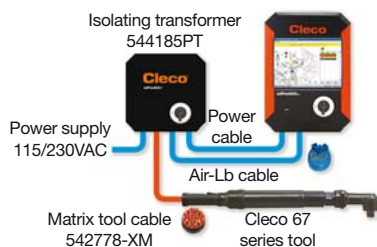
Torque range  
46 - 2,000 Nm

Bolt size  
M18 - M36

- Brushless motor
- High-resolution resolver
- Integrated transducer
- Memory chip with all relevant tool data

67EA235AL6

All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



XX	E	A	XXXX	XXX	X
----	---	---	------	-----	---

**Motor**  
67

**Supply**  
E - Electrical

### Tool Type

A - Right angle

### Max. Torque (Nm)

Under 60 Nm, rounded up to next 1 Nm.  
Above 60 Nm, rounded up to next 5 Nm.

**Locking**  
Pin locking

### Output Drive

AL6 - 3/4" sq. dr.  
AM6 - 3/4" sq. dr.  
ML6 - 3/4" sq. dr.  
AH8 - 1" sq. dr.

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Angle Head	
						Side to Centre	Height
	Nm	rpm	kg		mm	mm	mm
67EA235AL6	46 - 230	135	5.9	3/4"	655	26	58
67EA255AL6	55 - 255	115	5.9	3/4"	655	26	58
67EA310ML6	60 - 310	100	9.2	3/4"	739	27	65
67EA340AM6	70 - 335	90	9.5	3/4"	803	35	79
67EA460AM6	95 - 460	66	9.5	3/4"	803	35	79
67EA570AM6	115 - 570	53	9.5	3/4"	803	35	79
67EA860AH8	175 - 860	33	10.3	1"	643	38	237
67EA1035AH8	210 - 1035	25	10.5	1"	668	38	237
67EA1340AH8	270 - 1340	20	10.5	1"	668	38	237
67EA1700AH8	340 - 1700	16	10.5	1"	668	38	237
67EA2010AH8	400 - 2000	13	10.5	1"	668	38	237

\*Weights do not include tool cable or reaction bar.

NOTE: All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller. Contact your regional service centre for commissioning support.

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:  
Matrix connector

OPTIONAL:  
Standard tool cable 542778-XX, RA rotating cable 542780-XX, straight rotating cable 544056-XX, extension cable 542779-XX.  
Additional accessories: See catalogue SP-1020.

# Cleco Corded Inline Nutrunners with Transducer

## Inline Series

Torque range  
2 - 150 Nm

Bolt size  
M5 - M14

XX	E	S	E	XXX	XX	X			
<b>Motor</b> 18, 48	<b>Supply</b> E - Electrical	<b>Connector</b> E Air-LB			<b>Locking</b> Pin locking B - Ball locking				
<b>Tool Type</b> S – Inline					<b>Output Drive</b> Q – Quick-change chuck D2 - 1/4" sq. dr. D3 - 3/8" sq. dr. D4 - 1/2" sq. dr.				
<b>Max. Torque (Nm)</b> Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.									



18ESE06Q



48ESE25D3

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18ESE06Q	2 - 6	4000	1.1	1/4" QC	312	23
18ESE06D2	2 - 6	4000	1.1	1/4" sq dr.	300	23
18ESE12Q	3 - 12	1820	1.2	1/4" QC	330	23
18ESE12D3	3 - 12	1820	1.2	3/8" sq. dr.	315	23
18ESE17Q	4 - 17	1290	1.2	1/4" QC	330	23
18ESE17D3	4 - 17	1290	1.2	3/8" sq. dr.	315	23
18ESE22D3	5 - 22	985	1.2	3/8" sq. dr.	315	23
18ESE31D3	7 - 31	695	1.2	3/8" sq. dr.	315	23
48ESE12Q	3 - 12	4000	1.4	1/4" QC	343	23
48ESE12D2	3 - 12	4000	1.4	1/4" sq dr.	330	23
48ESE25D3	6 - 25	1820	1.5	3/8"	345	23
48ESE36D3	8 - 36	1290	1.5	3/8"	345	23
48ESE48D3	10 - 48	985	1.5	3/8"	351	23
48ESE65D4	13 - 65	750	2.4	1/2"	420	29
48ESE90D4	19 - 90	510	2.5	1/2"	435	29
48ESE125D4	26 - 125	360	2.5	1/2"	435	29
48ESE150D4	31 - 150	240	2.5	1/2"	435	29

\*Weights do not include tool cable.

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

### STANDARD EQUIPMENT:

Air-LB connector. Additional grip included with 18ES12Q and 18ES12D3.  
Tool available with matrix connector on request.  
Reaction bar included with inline tools with torque 17 - 150 Nm.

### OPTIONAL:

See page 86

Mounting plates: 543231 (all except the sizes listed below in catalogue SP-1020)

543235 - 18ESE06Q/D2, 48ESE12Q/D2

49087108 - 48ESE65D4, 48ESE90D4, 48ESE125D4 & 48ESE150D4

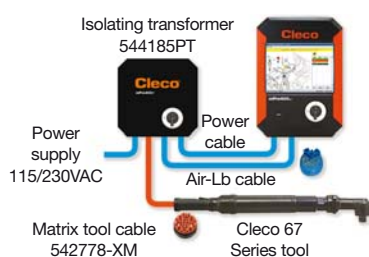
Additional accessories: See catalogue SP-1020.

### Inline Series

Torque range  
13 - 4,050 Nm

Bolt size  
M10 - M42

All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



67ES135D4

XX	E	S	XXXX	XXX	X
<b>Motor</b> 67	<b>Supply</b> E - Electrical				<b>Locking</b> Pin locking up to 1/2" B - Ball locking
<b>Tool Type</b> S - Inline					<b>Output Drive</b> D4 - 1/2" sq. dr. D6 - 3/4" sq. dr. D8 - 1" sq. dr. D12 - 1 1/2" sq. dr.
<b>Max. Torque (Nm)</b> Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.					

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
67ES65D4	13 - 64	535	4.7	1/2"	533	33
67ES105D4	21 - 104	330	4.7	1/2"	533	33
67ES135D4	27 - 135	245	4.7	1/2"	533	33
67ES190D6	38 - 190	165	5.3	3/4"	521	33
67ES285D6	57 - 285	115	5.3	3/4"	521	33
67ES385D6	77 - 386	83	5.3	3/4"	521	33
67ES475D6	95 - 475	67	5.4	3/4"	531	33
67ES610D6	122 - 610	50	5.4	3/4"	531	33
67ES850D8	170 - 848	33	7.7	1"	605	38
67ES1050D8	210 - 1050	27	7.7	1"	605	38
67ES1670D8	334 - 1668	17	7.7	1"	605	38
67ES2060D8	412 - 2060	14	7.7	1"	605	38
67ES4050D12	810 - 4050	6	20.5	1 1/2"	622	60

\*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).  
NOTE: All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.

GENERAL:  
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:  
Matrix connector, reaction bar, additional reaction bar for 67ES4050D12.

OPTIONAL:  
See page 86  
Additional accessories: See catalogue SP-1020.

# Cleco Corded Pistol Grip Nutrunners with Transducer

## Pistol Grip Series

Torque range  
2 - 1000 Nm

Bolt size  
M5 - M22

XX	E	P	E	XXX	XX	X		
<b>Motor</b> 18, 48	<b>Supply</b> E - Electrical	<b>Connector</b> E Air-LB			<b>Locking</b> Pin locking up to 1/2"			
<b>Tool Type</b> P – Pistol					<b>Output Drive</b>  Q – Quick-change chuck D2 - 1/4" sq. dr. D3 - 3/8" sq. dr. D4 - 1/2" sq. dr. D6 - 3/4" sq. dr. D8 - 1" sq. dr.			
<b>Max. Torque (Nm)</b>  Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.								



Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18EPE06Q	2 - 6	4000	1.0	1/4" QC	178	21
18EPE06D2	2 - 6	4000	1.0	1/4"	165	21
18EPE12Q	3 - 12	1820	1.1	1/4" QC	196	21
18EPE12D3	3 - 12	1820	1.1	3/8"	183	21
18EPE17Q	4 - 17	1290	1.1	1/4" QC	196	21
18EPE17D3	4 - 17	1290	1.1	3/8"	183	21
18EPE22D3	5 - 22	985	1.1	3/8"	183	21
18EPE31D3	7 - 31	695	1.1	3/8"	183	21
48EPE12Q	3 - 12	4000	1.2	1/4" QC	208	21
48EPE12D2	3 - 12	4000	1.2	1/4"	196	21
48EPE25D3	5 - 25	1820	1.3	3/8"	213	21
48EPE36D3	8 - 36	1290	1.3	3/8"	213	21
48EPE48D3	10 - 48	985	1.4	3/8"	218	21
48EPE65D4	13 - 65	750	2.3	1/2"	290	28
48EPE90D4	19 - 90	510	2.4	1/2"	305	28
48EPE125D4	26 - 125	360	2.4	1/2"	305	28
48EPE150D4	31 - 150	240	2.4	1/2"	305	23
48EPE200D6	125 - 195	180	4.3	3/4"	410	29
48EPE500D6	300 - 500	53	4.5	3/4"	410	29
48EPE1000D8	500 - 1000	33	7.3	1"	486	38

\*Weights do not include tool cable or swivel bail.

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

### STANDARD EQUIPMENT:

Air-LB connector.

Additional grip included with 18EPE12Q and 18EPE12D3.

Reaction bar included with pistol grip tools with torque 17 - 1000 Nm. Ball locking optional tool available with matrix connector on request.

### OPTIONAL:

See page 86

Additional accessories: See catalogue SP-1020.



## Push-to-Start Series

Torque range  
2 - 12 Nm

Bolt size  
M5 - M6



18EPE06QP



18ESE06QP

XX	E	P	E	XX	XX	P
Motor 18, 48	Supply E - Electrical	Connector E Air-LB				Push-to-start
Tool Type			Output Drive			
P - Pistol			Q - Quick-change chuck			
S - Inline			D3 - 3/8" sq. dr.			
Max. Torque (Nm)						

Under 60 Nm, rounded up to next 1 Nm.

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18EPE06QP	2 - 6	4000	1.19	1/4" QC	238	21
18EPE06D3P	2 - 6	4000	1.19	3/8"	224	21
18EPE12QP	3 - 12	1820	1.27	1/4" QC	196	21
18EPE12D3P	3 - 12	1820	1.27	3/8"	224	21
18ESE06QP	2 - 6	4000	1.31	1/4" QC	375	23
18ESE06D3P	2 - 6	4000	1.31	3/8"	360	23
18ESE12QP	3 - 12	1820	1.40	1/4" QC	375	23
18ESE12D3P	3 - 12	1820	1.40	3/8"	360	23

\*Weights do not include tool cable or swivel bail.

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

### STANDARD EQUIPMENT:

Air-LB connector. Additional grip (301857) included with 18EPE12Q and 18EPE12D3. Tool available with matrix connector on request.

### OPTIONAL:

See page 86

Additional accessories: See catalogue SP-1020.

# Cleco Corded Inline Floating Spindle Nutrunners with Transducer

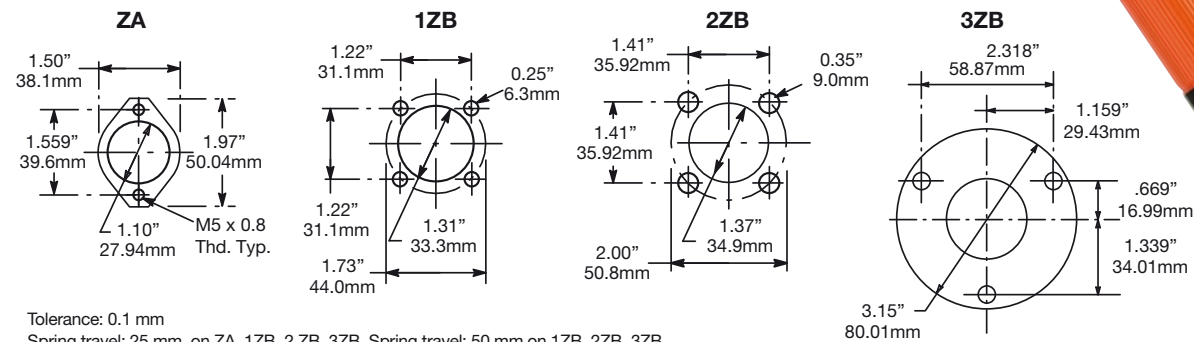
## Inline Floating Spindle Series

Torque range  
2 - 248 Nm

Bolt size  
M5 - M16

XX	E	S	E	XXX	XXX
<b>Motor</b> 18, 48	<b>Supply</b> E - Electrical	<b>Connector</b> E Air-LB		<b>Output Drive</b> ZA - 1/4" sq. dr. 1ZB - 3/8" sq. dr. 2ZB - 1/2" sq. dr. 3ZB - 3/4" sq. dr.	
<b>Tool Type</b> S - Inline					
<b>Max. Torque (Nm)</b> Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.					

Hole pitch dimensions



Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18ESE06ZA	2 - 6	4000	1.4	1/4"	394	23
18ESE12ZA	3 - 12	1820	1.5	1/4"	406	23
18ESE17ZA	4 - 17	1290	1.5	1/4"	406	23
48ESE12ZA	3 - 12	4000	1.5	1/4"	425	23
48ESE271ZB	8 - 27	1820	2.6	3/8"	559	23
48ESE361ZB	7 - 36	1290	2.6	3/8"	559	23
48ESE602ZB	11 - 57	855	3.8	1/2"	620	28
48ESE702ZB	14 - 68	570	3.8	1/2"	620	28
48ESE802ZB	17 - 82	450	4.4	1/2"	678	31
48ESE1152ZB	25 - 115	320	4.4	1/2"	678	31
48ESE1502ZB	31 - 150	245	4.4	1/2"	678	31
48ESE1653ZB	33 - 165	220	6.6	3/4"	726	40
48ESE2503ZB	50 - 248	145	6.6	3/4"	726	40

\*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).

GENERAL:  
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:  
Air-LB connector.  
Tool available with matrix connector on request.

OPTIONAL:  
See page 86  
Additional accessories: See catalogue SP-1020.



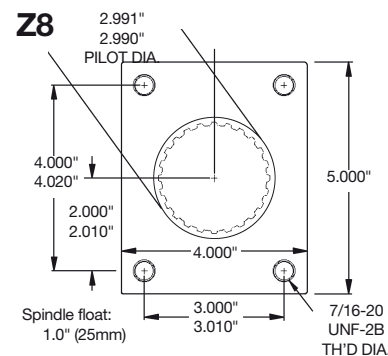
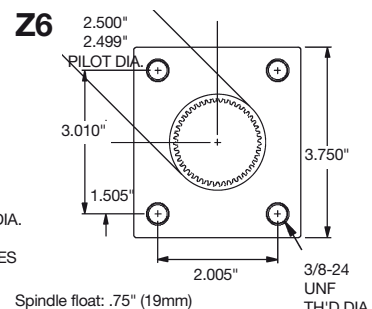
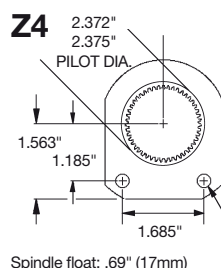
## Inline Floating Spindle Series

Torque range  
13 - 2,060 Nm

Bolt size  
M6 - M36

67ES2060Z8

### Mounting plates, dimensions



All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.



67	E	S	XXXX	XX
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**Motor**  
67

**Electric**

**Tool Type**

S - Inline

**Max. Torque (Nm)**

Under 60 Nm, rounded up to next 1 Nm.

Above 60 Nm, rounded up to next 5 Nm.

**Output Drive**  
Z4 - 1/2" sq. dr.  
Z6 - 3/4" sq. dr.  
Z8 - 1" sq. dr.

Model Number	Torque Range	Speed	Weight*	Output Drive	Length mm	Side to Centre mm
	Nm	rpm	kg			
67ES65BZ4	13 - 64	535	4.9	1/2"	533	33
67ES105BZ4	21 - 104	330	4.9	1/2"	533	33
67ES135BZ4	27 - 135	245	4.9	1/2"	533	33
67ES190Z6	38 - 190	165	7.1	3/4"	559	33
67ES285Z6	57 - 285	115	7.1	3/4"	559	33
67ES385Z6	77 - 386	83	7.1	3/4"	559	33
67ES475Z6	95 - 475	67	7.3	3/4"	569	33
67ES610Z6	122 - 610	50	7.3	3/4"	569	33
67ES850Z8	170 - 848	33	9.1	1"	605	38
67ES1050Z8	210 - 1050	27	9.1	1"	605	38
67ES1670Z8	334 - 1668	17	9.1	1"	605	38
67ES2060Z8	412 - 2060	14	9.1	1"	605	38

\*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).  
NOTE: All 67 series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller.

#### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

#### STANDARD EQUIPMENT:

Matrix connector, 67 series mounting plate.

#### OPTIONAL:

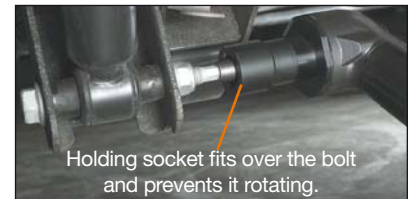
Standard tool cable 542778-XX, RA rotating cable 542780-XX, straight rotating cable 544056-XX, extension cable 542779-XX.  
Additional accessories: See catalogue SP-1020.

# Cleco Corded Hold & Drive Nutrunners with Transducer

## Hold & Drive Series

Torque range  
11 - 227 Nm

"Hold & Drive" bolts are used with these tools for automotive and truck chassis applications. They reduce the assembly operation to one person who works from one side of the workpiece. The bolt is held by the tool while the nut is tightened from the same side.



### Hold & Drive nomenclature

48	E	A	E	XXX	H	H	X	XX	X	XX	X
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Motor  
48

Electric

Tool

Connector  
E Air-LB

Type  
A - Right angle  
Max. Torque

Head Type  
H - Hold & Drive

Retainer Shaft  
3 - 3 1/2"  
4 - 4"  
5 - 5 3/8"  
6 - 5 7/8"  
9 - 9 1/2"

### Angle head nomenclature

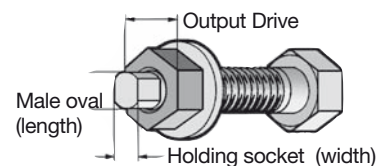
Holder Shape  
F - Female sq. dr.  
M - Male sq. dr.  
T - Torx  
O - Female oval

Oval Dim. (length)  
If socket type = 0  
(female oval)

Holder Size  
EA - 1/4EC - 3/8  
M5 - 5 mm15 - T15  
M6 - 6 mm20 - T20  
MA - 7 mm25 - T25  
MB - 8 mm (5/16") 30 - T30  
MC - 9 mm40 - T40  
MD - 10 mm45 - T45  
ME - 11 mm (7/16")  
MF - 12 mm

### Socket

EH - 11/16"	MG - 13 mm	MM - 19 mm (3/4")	MS - 25 mm
EJ - 13/16"	MH - 14 mm	MN - 20 mm	MT - 26 mm
EK - 7/8"	MI - 15 mm	MO - 21 mm	MU - 27 mm (1 1/16")
EM - 1"	MJ - 16 mm (5/8")	MP - 22 mm	MX - 30 mm (1 3/16")
EO - 1 1/8"	MK - 17 mm	MQ - 23 mm	MZ - 32 mm (1 1/4")
	ML - 18 mm	MR - 24 mm (15/16")	



Model Number	Torque Range	Speed	Length	Weight*	Head Height	Side to Centre
	Nm	rpm	mm	kg	mm	mm
48EAE53H	11 - 53	850	512	3.60	61	27
48EAE75H	15 - 74	600	512	4.03	61	27
48EAE110H	23 - 112	400	512	4.03	61	27
48EAE135H	28 - 134	270	522	4.03	61	27
48EAE230H	47 - 227	150	563	4.79	61	27

\*Weights do not include tool cable or reaction bar.

NOTE: To order a tool, use socket and tool nomenclatures. Only order the socket nomenclature for complete head assembly. Consult the parts list for individual socket part numbers.

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

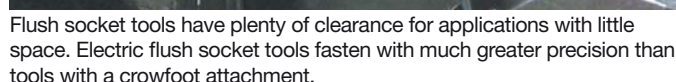
### STANDARD EQUIPMENT:

Air-LB connector. Spring travel 25.4 mm standard for holding bits.  
Tool available with matrix connector on request.

### OPTIONAL:

Additional accessories: See catalogue SP-1020.





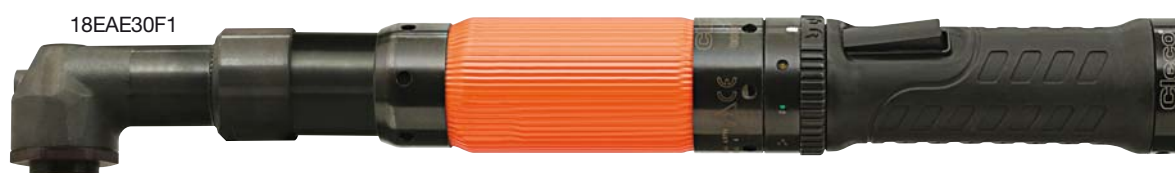
Torque range  
4.9 - 230 Nm

Bolt size  
M8 - M21

- Motor resolver
- High-resolution resolver
- Integrated transducer
- Memory chip with all relevant tool data



Head	in.	mm	Socket Size Range
F1	1.54	39	8 – 15 mm
F2	1.69	43	10 – 15 mm
F3	2.32	59	13 – 21 mm
F4	2.4	61	17 – 21 mm



## Socket nomenclature

XX	E	A	E	XXX	FX
<b>Motor</b>	<b>Electric</b>		<b>Connector</b>		
18			E Air-LB		
48	<b>Tool Type</b>				
	A – Right angle				
<b>Max. Torque</b>					
F1 – 16, 23, 30 Nm	F3 – 53, 75, 110 Nm				
F2 – 37, 52 Nm	F4 – 135, 230 Nm				
Under 60 Nm, rounded up to next 1 Nm.					
Above 60 Nm, rounded up to next 5 Nm.					
<b>Head Type</b>					
F1 head: 8 – 15 mm socket capacity					
F2 head: 10 – 15 mm socket capacity					
F3 head: 13 – 21 mm socket capacity					
F4 head: 13 – 21 mm socket capacity					

FX	XX	X	X
Flush Socket			Output Drive
1 F1			0 – Standard    1 – Fast lead    2 – Magnetic
2 F2			
3 F3			
4 F4			
		Extension	
		0 – Flush    4 – 1/2"    8 – 1"	
		2 – 1/4"    6 – 3/4"	
			Socket Size
	EC – 3/8"	MB – 8 mm (5/16")	MJ – 16 mm (5/8")
	EE – 1/2"	MD – 10 mm	MK – 17 mm
	EF – 9/16"	ME – 11 mm (7/16")	ML – 18 mm
	EH – 11/16"	MF – 12 mm	MM – 19 mm (3/4")
	EJ – 13/16"	MG – 13 mm	MN – 20 mm
		MH – 14 mm	MO – 21 mm
		MI – 15 mm	

Model Number	Head Type	Torque Range	Speed	Weight*	Length	Angle Head	
						Side to Centre	Height
		Nm	rpm	kg	mm	mm	mm
18EAE16F1	F1	4.9 - 16	1225	2.00	406	14	39
18EAE23F1	F1	4.6 - 23	860	2.00	406	14	39
18EAE30F1	F1	6.0 - 30	655	2.00	406	14	39
48EAE37F2	F2	8.0 - 37	1225	2.43	474	17	43
48EAE52F2	F2	11 - 52	860	2.43	474	17	43
48EAE53F3	F3	11 - 53	850	2.74	509	22	59
48EAE75F3	F3	15 - 75	600	2.74	509	22	59
48EAE110F3	F3	23 - 110	400	3.38	521	22	59
48EAE135F4	F4	27 - 135	270	4.03	522	27	61
48EAE230F4	F4	47 - 230	150	4.79	563	27	61

\*Weights do not include tool cable or reaction bar (if tool equipped with a reaction bar).  
NOTE: To order a tool, use socket and tool nomenclatures. Only order the socket nomenclature for complete head assembly. Consult the parts list for individual socket part numbers.

GENERAL:  
All tools must be used with Apex Tool Group approved cables and controllers.

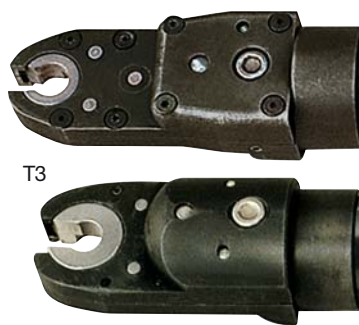
STANDARD EQUIPMENT:  
Air-LB connector. Tool available with matrix connector on request.

OPTIONAL:  
Additional accessories: See catalogue SP-1020.

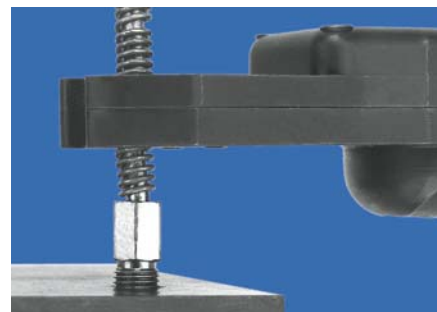
# Cleco Corded Tube Nutrunners with Transducer

## Tube Nut Series

Torque range  
10 - 40 Nm



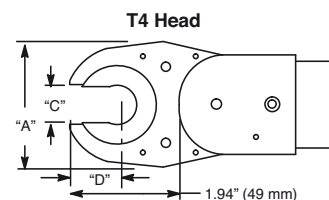
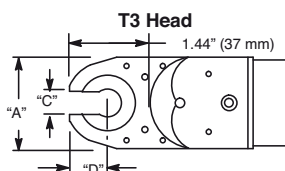
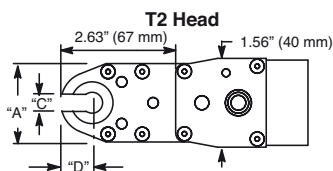
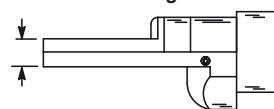
T3



The 48ET tube nut wrench changes direction each time the lever is actuated. If the direction of rotation is counter clockwise, the socket stops in the open position.



T2, T3 & T4  
Head Height



### Tube nut tool nomenclature

XX	E	T	E	XX	XX
----	---	---	---	----	----

**Motor**  
48

**Electric**

**Connector**  
E Air-LB

**Tool Type**  
T – Tube nut

**Max. Torque (Nm)**  
Under 60 Nm, rounded up to next 1 Nm.

**Head Type**  
T2 – 20 Nm  
T3 – 30 Nm  
T4 – 40 Nm

### Socket nomenclature

KSX	XX	XX	X
-----	----	----	---

**Head Type**  
KS2 – T2  
KS3 – T3  
KS4 – T4

#### Output Drive

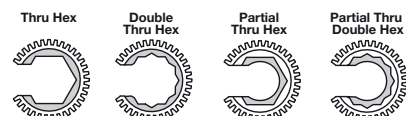
0 – Partial thru hex  
1 – Thru hex

#### Extension

0 – Flush 4 – 1/2" 8 – 1"  
2 – 1/4" 6 – 3/4"

#### Socket Sizes

EA – 1/4"	M5 – 5 mm	MH – 14 mm	MP – 22 mm
EC – 3/8"	M6 – 6 mm	MI – 15 mm	MQ – 23 mm
EE – 1/2"	MA – 7 mm	MJ – 16 mm (5/8")	MR – 24 mm (15/16")
EF – 9/16"	MB – 8 mm (5/16")	MK – 17 mm	MS – 25 mm
EH – 11/16"	MD – 10 mm	ML – 18 mm	MT – 26 mm
EJ – 13/16"	ME – 11 mm (7/16")	MM – 19 mm (3/4")	MU – 27 mm (1 1/16")
EK – 7/8"	MF – 12 mm	MN – 20 mm	
EM – 1"	MG – 13 mm	MO – 21 mm	



2 – Double thru hex  
3 – Partial double thru hex

#### Max. Hex Socket Size

MG, EE T2 head type  
MM, 3/4" T3 head type  
MU, 1 1/16" T4 head type 00, ##  
(specials) All head types

Model Number	Max. Output Drive	Torque Range	Speed	Weight*	Length	Head			
						A Width	B Blade Height	C Opening	D End/Centre
		Nm	rpm	kg	mm	mm	mm	mm	mm
48ETE20T2	1/2"	10 - 20	1425	2.0	430	36	14	7	13
48ETE30T3	3/4"	15 - 30	1030	2.0	422	42	15	13	19
48ETE40T4	1 1/16"	20 - 40	770	2.3	454	60	15	18	24

\*Weights do not include tool cable or reaction bar.

NOTE: To order a tool, use socket and tool nomenclatures. Order T2XXXX for a complete head assembly (e.g. T2MF02). To order individual sockets, use the prefix KS (e.g. KS2EA01 for a T2 1/4" flush, though hex socket).

#### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

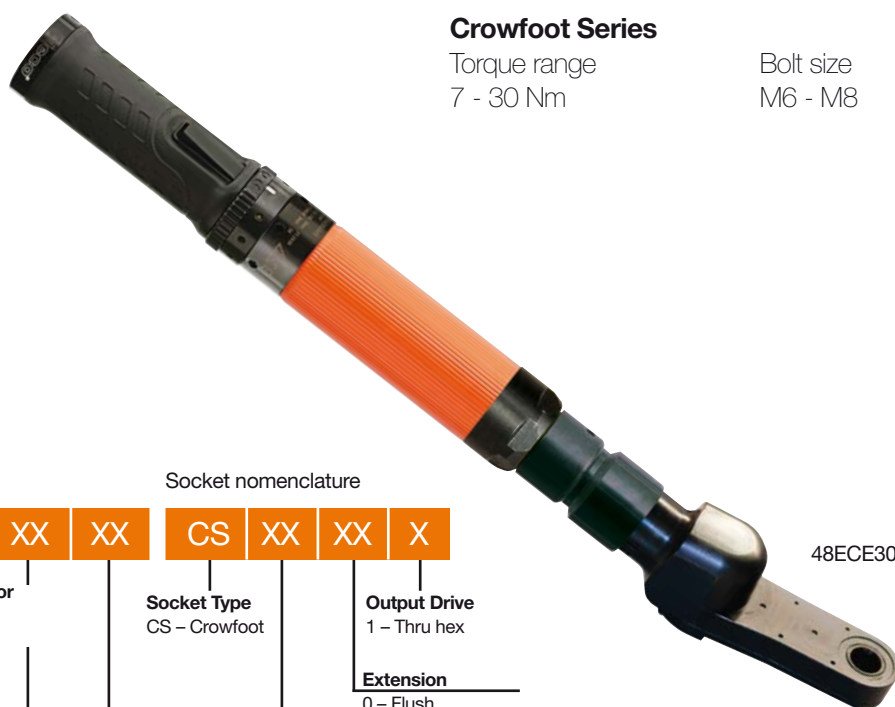
#### STANDARD EQUIPMENT:

Air-LB connector. Tool available with matrix connector on request.

#### OPTIONAL:

See page 86

Additional accessories: See catalogue SP-1020.



## Crowfoot Series

Torque range  
7 - 30 Nm

Bolt size  
M6 - M8

### Crowfoot tool nomenclature

48	E	C	E	XX	XX
Motor 48	Electric	Connector E Air-LB			
<b>Tool Type</b>					
C - Crowfoot					
<b>Max. Torque (Nm)</b>					
<b>Head Type</b>					
C1 - 15° crowfoot					
C3 - 30° crowfoot					

### Socket nomenclature

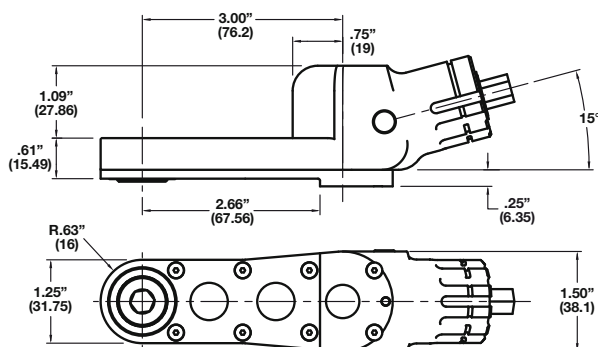
CS	XX	XX	X
Socket Type CS - Crowfoot			
<b>Output Drive</b>			
1 - Thru hex			
<b>Extension</b>			
0 - Flush			
4 - 1/2"			
6 - 3/4"			
<b>Socket Size</b>			
EA - 1/4"		MC - 9 mm	
EC - 3/8"		MD - 10 mm	
EE - 1/2"		ME - 11 mm (7/16")	
EF - 9/16"		MF - 12 mm	
MA - 7 mm		MG - 13 mm	
MB - 8 mm (5/16")		MH - 14 mm	
		MI - 15 mm*	

\*Fragile. Light duty applications.

48ECE30C 1

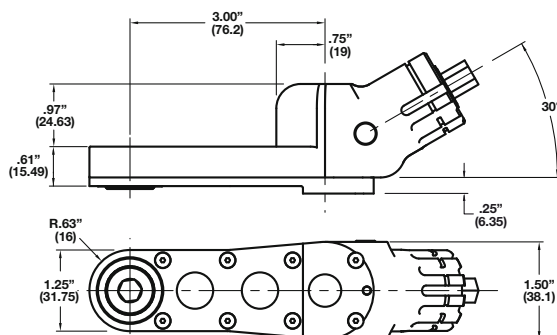
C1 - 15° head (part number 301959)

Max. recomm. torque: 30 Nm



C3 - 30° head (part number 301960)

Max. recomm. torque: 30 Nm



Model Number		Torque Range	Speed	Weight*	Length
15° Head	30° Head	Nm	rpm	kg	mm
48ECE30C1	48ECE30C3	10.5 - 30	860	2.3	521

\*Weights do not include tool cable or reaction bar.

NOTE: To order a tool, use socket and tool nomenclatures. To order individual sockets, use the prefix KS (e.g. CSEA01 for a 1/4" flush, though hex socket).

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

### STANDARD EQUIPMENT:

Air-LB connector. Tool available with matrix connector on request.

### OPTIONAL:

Additional accessories: See catalogue SP-1020.

# Cleco Corded Right Angle Floating Spindle Nutrunners with Transducer

## Right Angle Series with Floating Spindle

Torque range  
5.1 - 255 Nm

Bolt size  
M7 - M18



48EAE135S461

Right angle series with floating spindle nomenclature

XX	E	A	X	XXX	XX	X	X
Motor	Electric	Connector			Sq. Dr.		Extension
18		- Air-LB			3 - 3/8" (S1, S2)		1 - 1.13" (S1), 1.00" (S2 & S3), 1.25" (S4)
48	Tool Type				4 - 1/2" (S3, S4)		2 - 2.13" (S1), 3.00" (S2), 2.5" (S4 1/2")
67	A - Right angle				6 - 3/4" (S4)		5 - 5.13" (S2), 4.25" (S4)
							6 - 6.0" (S4 1/2"), 7.0" (S4 3/4")
							11 - 11.0" (S4 3/4")
<b>Max. Torque (Nm)</b>					<b>Tool Termination</b>		
S1 head - 16, 23 or 30 Nm					S1 Sliding (floating) spindle		
S2 head - 37 or 52 Nm					S2 Sliding (floating) spindle		
S3 head - 53, 75, 95 or 110 Nm					S3 Sliding (floating) spindle		
S4 head - 135 or 230 Nm (48 Series)					S4 Sliding (floating) spindle		
S4 head - 150, 185, 210, 235 or 255 Nm (67 Series)							

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18EAE16S131	5.1 - 16	1225	2.00	3/8"	406	14
18EAE23S131	7.2 - 23	860	2.00	3/8"	406	14
18EAE30S131	6.0 - 30	655	2.00	3/8"	406	14
48EAE37S231	8.0 - 37	1225	2.43	3/8"	474	17
48EAE52S231	11 - 52	860	2.43	3/8"	474	17
48EAE53S341	11 - 53	850	2.74	1/2"	509	22
48EAE75S341	15 - 75	600	2.74	1/2"	509	22
48EAE95S341	20 - 95	460	3.38	1/2"	521	22
48EAE110S341	23 - 110	400	3.38	1/2"	521	22
48EAE135S461	28 - 135	270	4.03	3/4"	522	27
48EAE230S461	47 - 230	150	4.79	3/4"	563	27
67EA150S461	30 - 150	210	5.90	3/4"	655	26
67EA185S461	37 - 185	170	5.90	3/4"	655	26
67EA210S461	42 - 210	155	5.90	3/4"	655	26
67EA235S461	46 - 230	135	5.90	3/4"	655	26
67EA255S461	55 - 255	115	5.90	3/4"	655	26

\*Weights do not include tool cable or mounting plate.

NOTE: All 67 Series tools require an isolating transformer (544185PT) for operation with a Cleco Global Controller

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

### STANDARD EQUIPMENT:

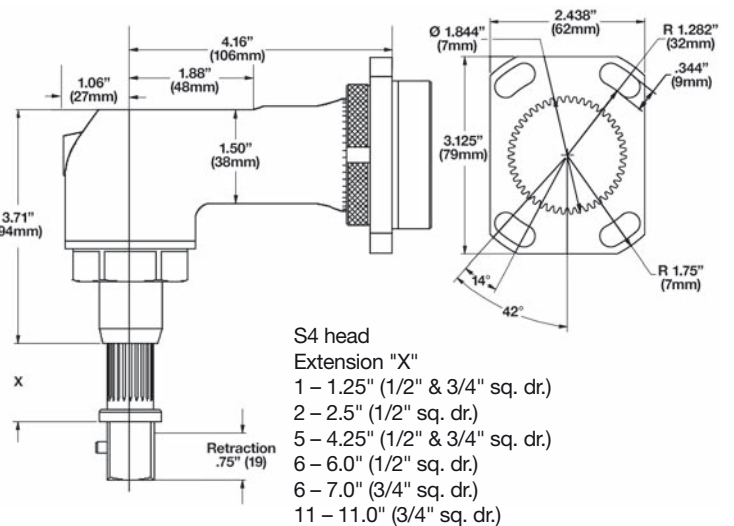
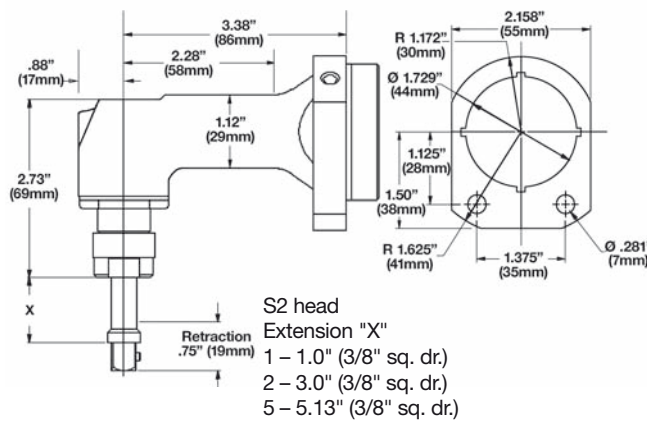
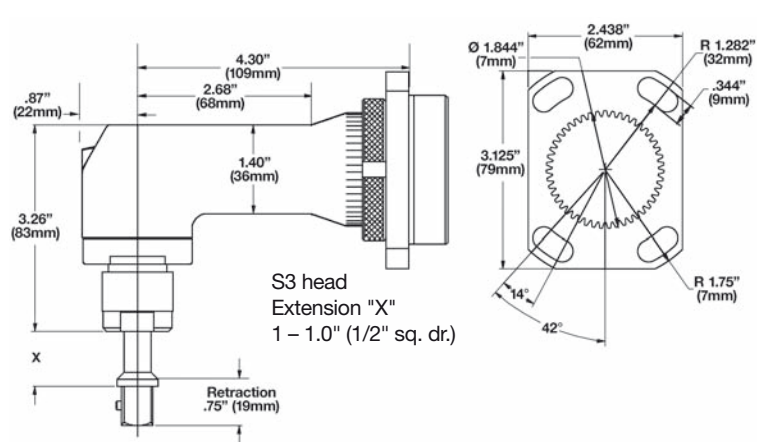
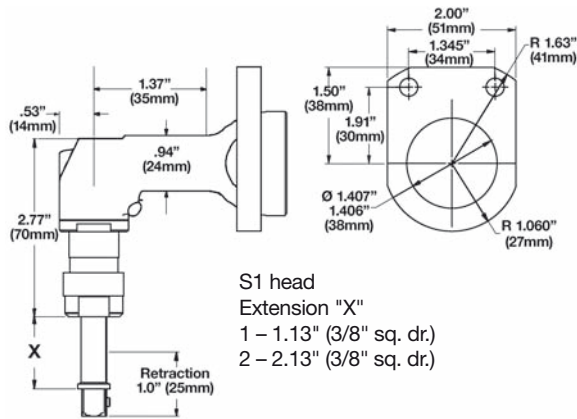
18-/48 tools: Air-LB connector, mounting plate.  
Tool available with matrix connector on request.  
67 tools: Matrix connector, mounting plate.

### OPTIONAL:

Additional accessories: See catalogue SP-1020.



18EA, 48EA & 67EA floating spindle right angle heads



# Cleco Current Control Right Angle Nutrunners

## Right Angle Series

Torque range  
2 - 230 Nm

Bolt size  
M5 - M16



XX	C	A	E	XXX	XXX	X
Motor 18, 48	Current Control	Connector E - Air-LB				Locking Pin locking B - Ball locking
<b>Tool Type</b> A - Right angle						<b>Output Drive</b> AL2 - 1/4" sq. dr. AM4 - 1/2" sq. dr. AL3 - 3/8" sq. dr. AH4 - 1/2" sq. dr. AM3 - 3/8" sq. dr. MH4 - 1/2" sq. dr. AX6 - 3/4" sq. dr.
<b>Max. Torque (Nm)</b> Under 60 Nm, rounded up to next 1 Nm. Above 60 Nm, rounded up to next 5 Nm.						

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Angle Head	
						Side to Centre	Height
	Nm	rpm	kg		mm	mm	mm
18CAE08AL2	2 - 8	3000	1.3	1/4"	345	13	36
18CAE15AM3	4 - 15	1300	1.5	3/8"	376	15	41
18CAE22AM3	5 - 22	920	1.5	3/8"	376	15	41
18CAE28AM3	6 - 28	700	1.5	3/8"	376	15	41
48CAE15AL3	3 - 15	2855	1.7	3/8"	398	15	41
48CAE28AL3	6 - 28	1300	1.9	3/8"	410	15	41
48CAE41AM3	9 - 41	1090	2.0	3/8"	440	19	48
48CAE58AM3	12 - 58	770	2.0	3/8"	440	19	48
48CAE58AM4	12 - 58	770	2.0	1/2"	440	19	48
48CAE90AH4	18 - 87	515	3.0	1/2"	470	21	58
48CAE105AH4	21 - 104	340	3.0	1/2"	470	21	58
48CAE135MH4	27 - 133	265	3.3	1/2"	485	24	61
48CAE175AX6	36 - 176	190	4.6	3/4"	549	27	69
48CAE230AX6	46 - 230	145	4.6	3/4"	549	27	69

\*Weights do not include tool cable or reaction bar.

GENERAL:  
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:  
Air-LB connector, locking ball optional.

OPTIONAL:  
Standard tool cable 961259-XX, RA rotating cable 961260-XX, straight rotating cable 961251-XX, extension cable 961249-XX.  
Additional accessories: See catalogue SP-1020.



## Inline Series

Torque range  
2 - 150 Nm

Bolt size  
M5 - M14

48CSE25D3

18CSE06Q

XX	C	S	E	XXX	XXX	X
----	---	---	---	-----	-----	---

Motor

Current  
Control

Connector  
E - Air-LB

Locking  
Pin locking  
B - Ball locking

**Tool Type**  
S - Inline

**Output Drive**

### Max. Torque (Nm)

Under 60 Nm, rounded up to next 1 Nm.  
Above 60 Nm, rounded up to next 5 Nm.

Q - Quick-change chuck  
D2 - 1/4" sq. dr.  
D3 - 3/8" sq. dr.  
D4 - 1/2" sq. dr.

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18CSE06Q	2 - 6	4000	1.1	1/4" QC	312	23
18CSE06D2	2 - 6	4000	1.1	1/4"	300	23
18CSE12Q	3 - 12	1820	1.2	1/4" QC	330	23
18CSE12D3	3 - 12	1820	1.2	3/8"	315	23
18CSE17Q	4 - 17	1290	1.2	1/4" QC	330	23
18CSE17D3	4 - 17	1290	1.2	3/8"	315	23
18CSE22D3	5 - 22	985	1.2	3/8"	315	23
18CSE31D3	7 - 31	695	1.2	3/8"	315	23
48CSE12Q	3 - 12	4000	1.4	1/4" QC	343	23
48CSE12D2	3 - 12	4000	1.4	1/4"	330	23
48CSE25D3	6 - 25	1820	1.5	3/8"	345	23
48CSE36D3	8 - 36	1290	1.5	3/8"	345	23
48CSE48D3	10 - 48	985	1.5	3/8"	351	23
48CSE65D4	13 - 65	750	2.4	1/2"	420	29
48CES90D4	19 - 90	510	2.5	1/2"	435	29
48CSE125D4	26 - 125	360	2.5	1/2"	435	29
48CSE150D4	31 - 150	240	2.5	1/2"	435	29

\*Weights do not include tool cable or reaction bar.

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

### STANDARD EQUIPMENT:

Air-LB connector, additional handle with 18CSE12Q and 18CSE12D3. Reaction bar included with inline tools with torque 17 - 150 Nm.  
Ball locking optional

### OPTIONAL:

Mounting plates: 543231 (all except those listed below)

543235 - 18ES06Q/D2, 48ES12Q/D2

49087108 - 48ES65D4, 48ES90D4, 48ES125D4, 48ES150D4

Additional accessories: See catalogue SP-1020.

# Cleco Current Control Pistol Grip Nutrunners

## Pistol Grip Series

Torque range  
2 - 150 Nm

Bolt size  
M5 - M14



48CPE25D3



18CPE6Q

XX	C	P	E	XXX	XX	X			
Motor 18, 48	Current Control	Connector E Air-LB			Locking Pin locking B - Ball locking	Output Drive Q - Quick-change chuck D2 - 1/4" sq. dr. D3 - 3/8" sq. dr. D4 - 1/2" sq. dr.			
Tool Type P – Pistol									
Max. Torque (Nm)									
Under 60 Nm, rounded up to next 1 Nm.									
Above 60 Nm, rounded up to next 5 Nm.									

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18CPE06Q	2 - 6	4,00	1.0	1/4" QC	178	21
18CPE06D2	2 - 6	4000	1.0	1/4"	165	21
18CPE12Q	3 - 12	1820	1.1	1/4" QC	196	21
18CPE12D3	3 - 12	1820	1.1	3/8"	183	21
18CPE17Q	4 - 17	1290	1.1	1/4" QC	196	21
18CPE17D3	4 - 17	1290	1.1	3/8"	183	21
18CPE22D3	5 - 22	985	1.1	3/8"	183	21
18CPE31D3	7 - 31	695	1.1	3/8"	183	21
48CPE12Q	3 - 12	4000	1.2	1/4" QC	211	21
48CPE12D2	3 - 12	4000	1.2	1/4"	196	21
48CPE25D3	6 - 25	1820	1.3	3/8"	213	21
48CPE36D3	8 - 36	1290	1.3	3/8"	213	21
48CPE48D3	10 - 48	985	1.4	3/8"	218	21
48CPE65D4	13 - 65	750	2.3	1/2"	274	28
48CPE90D4	19 - 90	510	2.4	1/2"	287	28
48CPE125D4	26 - 125	360	2.4	1/2"	287	28
48CPE150D4	31 - 150	240	2.4	1/2"	287	23

\*Weights do not include tool cable or reaction bar.

GENERAL:  
All tools must be used with Apex Tool Group approved cables and controllers.

STANDARD EQUIPMENT:  
Air-LB connector, swivel bail, additional handle with 18CPE12Q & 18CPE12D3.  
Reaction bar included with inline tools with torque 17 - 150 Nm. Ball locking optional

OPTIONAL:  
Standard tool cable 961259-XX, RA rotating cable 961260-XX,  
straight rotating cable 961251-XX, extension cable 961249-XX.  
Additional accessories: See catalogue SP-1020.



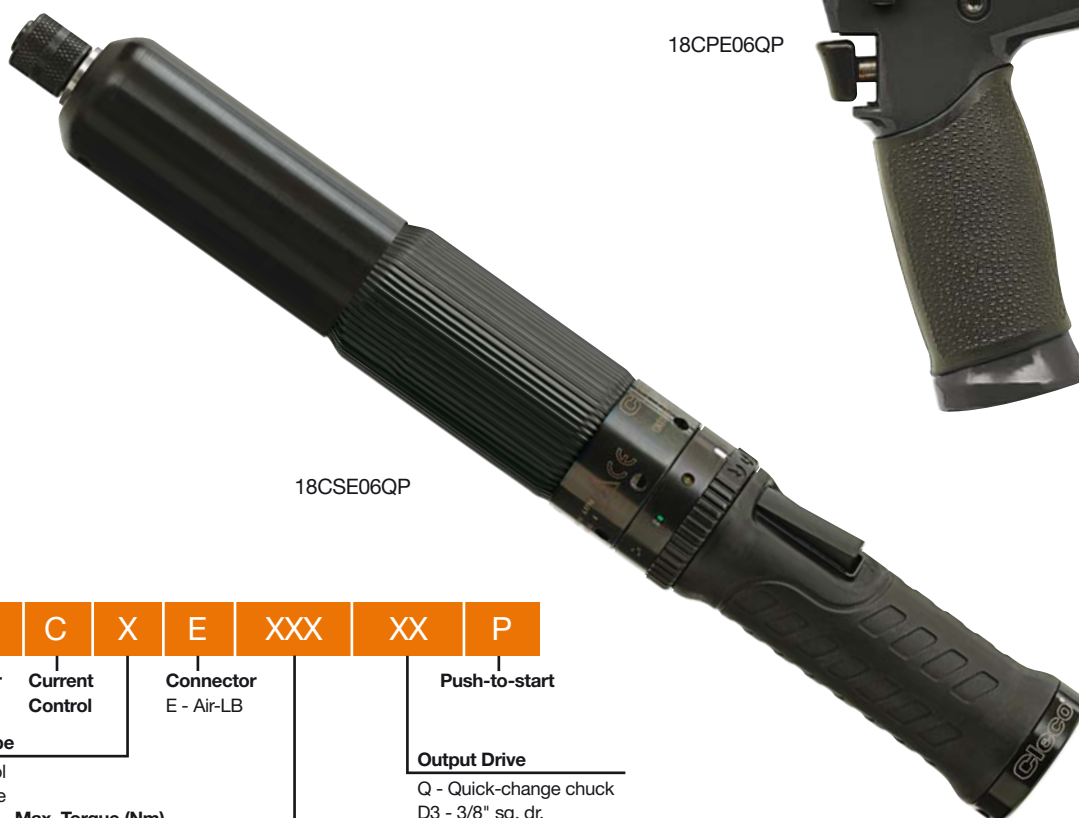
## Push-to-Start Series

Torque range  
2 - 12 Nm

Bolt size  
M5 - M6



18CPE06QP



18CSE06QP

XX	C	X	E	XXX	XX	P
Motor 18, 48	Current Control		Connector E - Air-LB			Push-to-start
<b>Tool Type</b>				<b>Output Drive</b>		
P - Pistol S - Inline				Q - Quick-change chuck D3 - 3/8" sq. dr.		
<b>Max. Torque (Nm)</b>						
Under 60 Nm, rounded up to next 1 Nm.						

Model Number	Torque Range	Speed	Weight*	Output Drive	Length	Side to Centre
	Nm	rpm	kg		mm	mm
18CPE06QP	2 - 6	4000	1.19	1/4" QC	238	21
18CPE06D3P	2 - 6	4000	1.19	3/8"	224	21
18CPE12QP	3 - 12	1820	1.27	1/4" QC	238	21
18CPE12D3P	3 - 12	1820	1.27	3/8"	224	21
18CSE06QP	2 - 6	4000	1.31	1/4" QC	375	23
18CSE06D3P	2 - 6	4000	1.31	3/8"	360	23
18CSE12QP	3 - 12	1820	1.40	1/4" QC	375	23
18CSE12D3P	3 - 12	1820	1.40	3/8"	360	23

\*Weights do not include tool cable or reaction bar.

### GENERAL:

All tools must be used with Apex Tool Group approved cables and controllers.

### STANDARD EQUIPMENT:

Air-LB connector, swivel bail pistol models, additional handle (301857) with 18CPE12Q & 18CPE12D3.

### OPTIONAL:

Standard tool cable 961259-XX, RA rotating cable 961260-XX, straight rotating cable 961251-XX, extension cable 961249-XX. Additional accessories: See catalogue SP-1020.

## Cleco Electric Control Nutrunners – Accessories



Tool Type	Model Number	Cover	Rotating Suspension Bail	Mounting Plate	Extension Kit
Right angle	17/18EA08AL2	205832	541715-2	---	---
	17/18EA...AM3	205834	541715-2	---	535832
	47/48EA...AM3/4	543070	541715-2	543235	---
	47/48EA...AH4	543070	541715	543230	542428
	47/48EA135MH4	543071	541715	543230	542428
	47/48EA...AX5	205838	541715	543232	---
	67EA...AL6	205838	35007004	49097101	48316033
(included in the standard equipment for the tool)					
	67EA...AM6	---	48A17006	45017152	---
(included in the standard equipment for the tool)					
Flush socket	17/18EA...F1...	---	541715-2	57217101 (screw 57218103 required)	---
	47/48EA...F2...	---	541715-2	43287131	---
	47/48EA...F3...	---	541715-2	49097101 (lock nut 49098103 required)	---
	47/48EA...F4...	205838	541715	49097101 (lock nut 49098103 required)	49098103
Hold-N-Drive	47/48EA ...H...over 100NM	205838		49097101 (lock nut 49098103 required)	48316033
	47/48EA ...H...under 100NM	205838	541715-2	49097101 (lock nut 49098103 required)	48316033

### Joint Simulator with Mounting Plate for Hard/Soft Fastening Cases

Order No.	Description
W09164K	5 Nm hard/15 Nm soft
W08780K	10 Nm hard/30 Nm soft
W08779K	20 Nm hard/50 Nm soft

W08779K



### Tool & cable tester

Order No.	Description
961024	Tool & Cable Tester Tool memory programming
542991	Tool & Cable Tester

Note: Adapter cable for Air-LB tool on request.



Tool Cable with Air-Lb

Order No.	Description
961259-XXX	Standard cable with fixed connector
961260-XXX	Standard cable with rotating right angle connector
961250-XXX	Special cable, highly flexible for greatest possible durability, fixed connector
961251-XXX	Special cable, highly flexible for greatest possible durability, rotating inline connector
961252-XXX	Special cable, highly flexible for greatest possible durability, rotating right angle connector

Extension Cable with Air-Lb

Order No.	Description
961249-XXX	Standard extension cable
961248-XXX	Connection cable from the STMH module in the control cabinet to the tool cable



Extension Cable with Matrix Connector

Tool	Extension	Rotating Cable	Extension	
			Ft.	M
542778-1M*	542779-1M	542780-1M*	3	1
542778-2M	542779-2M	542780-2M*	6	2
542778-3M*	542779-3M	542780-3M	9	3
542778-6M	542779-6M	542780-6M	19.5	6
542778-8M	542779-8M	542780-8M	26	8
542778-10M	542779-10M	542780-10M	33	10
542778-15M	542779-15M	542780-15M	49	15
	542779-20M		66	20
	542779-25M		82	25
	542779-30M		98	30
	542779-40M		131	40
542778-50M	542779-50M	542780-50M	164	50

\* Must be used with the extension cable 542779.

Rotating tool cable, can be rotated by approx. 330°



Extension cable 542779-3M



# Light. Intelligent. Full per-

LiveWire 2 offers functions for precise torque, angle and speed control for safety-critical fastening cases, packed in a new, light, wireless design. With more than 1700 fastening operations per battery charge and the quick charging feature you are assured long tool operating times for the assembly of your safety-critical applications.

LiveWire™ has been designed and tested for usage in a harsh industrial environment.

### New Diversity Antenna System (2.4/5 GHz)

- Optimised 5GHz performance
- Double antenna system
- Uniband 3 support up to 5.825 GHz / channel 165



### Digital Process Control

- Autom. joint number worker prompting
- Autom. selection of the process visualisation
- Configurable error handling

### Electronic intelligence

- Integrated controller with current/power monitoring
- Integrated servo with I/O signal processing
- Supply voltage is measured automatically
- 512-cycle memory buffer





# formance. Without Cables.

## Expansion Platform for Optional Accessories

- Barcode scanner (order no.: 937240PT)  
Makes possible real-time barcode data acquisition
- Adjustable auto parameter selection  
configuration option for enable and disable
- Tag/sensor for various  
locating systems possible (on request)
- Individual customer-specific  
expansion solutions possible



Scanner 937240PT (optional)



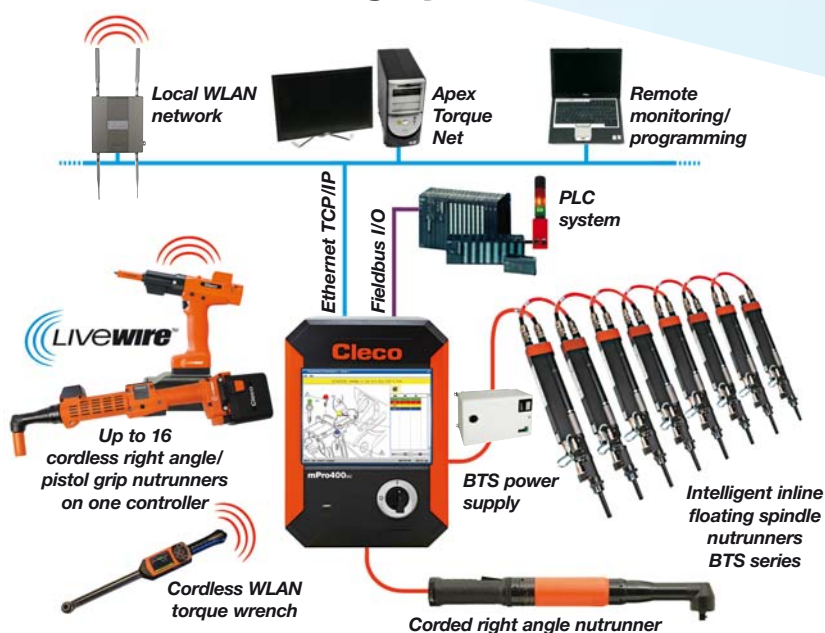
Configurable LED joint illumination

## Modular Fastening System



### Operator display

- Operator information in real-time
- 3-line adjustable LCD display
- Status indications:
  - Green LCD = IO
  - Yellow LCD = in operation
  - Red LCD = NOK / error
  - Green LED = OK
  - Red LED = NOK
- Configurable application buttons



**One nutrunner controller can acquire up to 16 combined fastening tools and control them based on the process.**

# The Most Cost-Effective Solution for Safety-

## Savings of up to 50 % Compared to Conventional Systems!

Mobility is one of the main advantages of wireless communication. LiveWire™ from Cleco combines the freedom and flexibility of cordless tools in fastening applications where documentation is required. By using a 2.4 GHz/5 GHz WLAN (Wireless Local Area Network) interface (industry standard) as well as the highest level security encryption and authentication plus 512-cycle tool buffer memory, LiveWire™ ensures safety-critical data transmissions are never jeopardised.



**Up to 16  
LiveWire Tools \*  
1 Line Controller**

**\*Contact Regional Application  
Center for requirements  
greater than 10.**

**LIVewire™**  
**vmax™**

# Critical Screwed Joints on the Market.

## Up to 83% More Productivity!

Cleco LiveWire™ tools are also available with Vmax™, a corded solution that offers lasting tool performance and increases the speed by up to 83 % without compromising accuracy or service life. These innovations operate on the same principle using which up to 10 tools are controlled by one nutrunner controller. In this way up to 50 % of the costs are saved compared to conventional systems. The new Vmax™ technology also takes into account the power supply used and immediately regulates the maximum tool speed. LiveWire™ with Vmax™ combines the performance you need with one of most versatile cordless systems on the market.



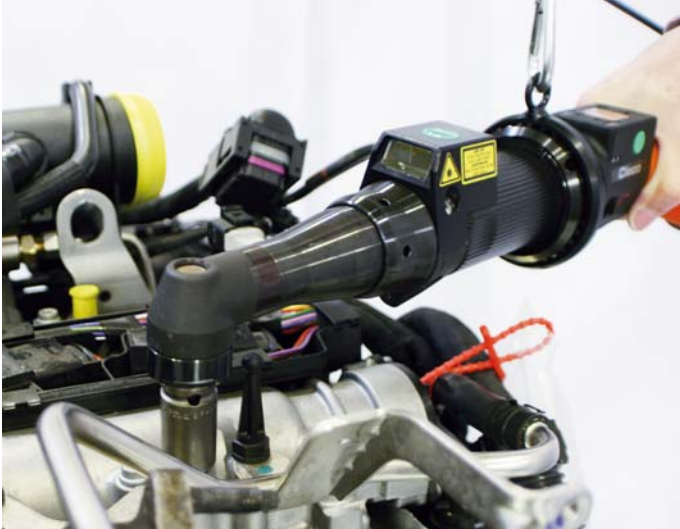
## WLAN Tech. Data/ Options:

Features	2.4 & 5 GHz Tools with LiveWire Memory Chip* 17B... and 47B... Series
Standard	IEEE 802.11a/b/g/h/n
Security	WEP • 64/128-bit encryption  WPA/WPA2/802.1x 128-bit TKIP/CCMP encryption • Pre-shared key mode (PSK) LEAP, PEAP • 802.1x EAP authentication (LEAP, PEAP, TLS, TTLS GTC, MD5, OTP, PAP, CHAP, MSCHAP, SCHAPv2, TTLS MSCHAPv2) on request
Range	Typically up to 50 m (164' 0.5")
Canals	1 – 13 (2.401 – 2.483 GHz) 36 – 165 (5.17 – 5.825 GHz)
Transmit power	15 dBm @ 5GHz 20 dBm @ 2.4 GHz (b)
Sensitivity	-94 dBm (@1 Mbps) -80 dBm (@ 5 GHz)
Modulation	DSSS/OFDM

*\* All important WLAN settings incl. the individual MAC addresses are stored in the interchangeable LiveWire memory chip. This feature permits, even in a secured WLAN, straightforward, quick tool replacements by simply changing the LiveWire memory chip.*



# Numerous Application-



## **Cordless Right Angle Nutrunner for Motor Assembly**

Fastening accessories using a Cleco right angle nutrunner incl. tool bail on a balancer.



47BAYSB35AM3 with 936400PT

## **Straightforward Fastening using LiveWire Pistol Grip Nutrunner**

Fastening armrest using a Cleco pistol grip nutrunner.



17BPYSB13Q



## **Safety-Critical Fastening Using A LiveWire Right Angle Nutrunner**

Seat frame fastening using Cleco LiveWire right angle nutrunner at a well-known international vehicle seat manufacturer.



47BAYSB28AM3



# Areas for LiveWire Tools



Cleco LiveWire fastening tools at the Austrian sports car manufacturer KTM in Graz. LiveWire right angle and pistol grip nutrunners together with a cordless electronic torque wrench on a common nutrunner controller. Cordless productivity for all safety-critical joints on the premium sports car X-Bow.



## **Cleco LiveWire I-Wrench**

WLAN torque wrench in professional case. Can be perfectly integrated into Cleco LiveWire systems and works together with Cleco LiveWire nutrunners and Cleco/DGD nutrunner controllers.

# New LiveWire 2 Right Angle Nutrunners with Transducer

## LiveWire 2 Right Angle Nutrunners

**Torque range**  
5.5 - 50 Nm

**Bolt size**  
M5 - M10

- About 360 g lighter than LiveWire tools
- Flexible expansion platform
- Brushless precision motor
- Exact torque measurement by transducer
- Integrated intelligent functions with power management and I/O signal processing
- Integrated servo



### Nomenclature for weight-reduced LiveWire 2 right angle nutrunners

47	B	A	Y	P	B	XXX	XXX	X	L					
Motor 47	Supply B – Battery/ PM48				Version B – 26–48 V	Output Drive Size AM3 – 3/8" square drive		Tool Series L – LiveWire 2 Series						
Version A – Right angle					Peripherals P – Expansion platform	Output Drive Locking – Pin locking B – Ball locking								
Data Transfer Y – WLAN: Dual band 2.4 GHz, 5 GHz						Max. Torque Nm								
						15 - 15 Nm    35 - 35 Nm								
						21 - 21 Nm    50 - 50 Nm								
						28 - 28 Nm								

LiveWire 2 Right Angle Nutrunner	Torque Range	Free Speed (rpm)			Weight without Battery	Output Drive Size Square Drive	Length incl. Battery	
		Battery Types		PM48			26 V	44 V
Model Number	Nm	26 V*	44 V*	48 V	kg		mm	
47BAYPB15AM3L	5.5-15	538	983	983	1.83	3/8"	563	544
47BAYPB21AM3L	8-21	411	751	751	1.83	3/8"	563	544
47BAYPB28AM3L	10-28	291	532	532	1.83	3/8"	563	544
47BAYPB35AM3L	12-35	244	447	447	2.09	3/8"	595	576
47BAYPB50AM3L	18-50	168	293	293	2.11	3/8"	603	582

\*Free speeds with fully charged battery.

**General:** All tools must be used with a suitable Cleco/DGDnutrunner controller or PC software solution.

Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

**Optional accessories:** Batteries, battery chargers, scanner, sockets and bits are not included in the standard equipment. You will find all accessories on pages 133 and 134 of this catalogue.



## LiveWire Right Angle Series

**Torque range**  
5.5 - 70 Nm

**Bolt size**  
M5 - M10

- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo

47BAYSB28AM3



### Right angle nutrunner nomenclature

47	B	A	X	X	B	XXX	XXX	X
Motor 47	Supply B- Batt./PM48				Input Voltage B - 26-48V		Output Drive Size AM3 - 3/8" Sq. dr. P4 - 1/2" Sq. dr.	Output Drive Locking - Pin locking B - Ball locking
Tool Version A - Right angle				Peripherals S - Barcode scanner - None			Max. Torque (Nm)	
Data Transfer Y - WLAN: Dual band 2.4 GHz, 5 GHz Z - Xbee: IEEE 802.15.4 (4 tools per access point)							15 - 15 Nm 21 - 21 Nm 28 - 28 Nm	35 - 35 Nm 50 - 50 Nm 70 - 70 Nm

Right Angle Nutrunner	Torque Range	Free Speed (rpm)			Weight Without Battery	Output Drive Size Square	Length with Battery	
		Batteries		PM48			26 V	44 V
Order No.	Nm	26 V*	44 V*	48 V	kg		mm	
47BAYSB15AM3	5.5-15	538	983	983	2.20	3/8"	554	535
47BAYSB21AM3	8-21	411	751	751	2.20	3/8"	554	535
47BAYSB28AM3	10-28	291	532	532	2.20	3/8"	568	549
47BAYSB35AM3	12-35	244	447	447	2.46	3/8"	600	581
47BAYSB50AM3	18-50	168	293	293	2.48	3/8"	608	589
47BAYSB70P4	24-70	123	216	216	4.18	1/2"	691	672

\*Free speed with fully charged battery.

**General:** All tools must be used with a suitable Cleco/DGDnutrunner controller or PC software solution.

Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

**Optional accessories:** Batteries, battery chargers, scanner, sockets and bits are not included in the standard equipment. You will find all accessories on pages 133 and 134 of this catalogue.

# Cordless Pistol Grip Nutrunners with Transducer



17BPYSB13Q

(The Apex  $\mu$ -Guard bit shown above is not included in the standard equipment.)

## Pistol Grip Series

**Torque range**  
3.0 - 13 Nm

**Bolt size**  
M5 - M6

- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo



## Pistol grip nutrunner nomenclature

17	B	P	X	X	B	XX	Q
<b>Motor</b> 17	<b>Supply</b> Battery/PM48				<b>Input Voltage</b> B - 26-48V		<b>Type of Output Drive</b> Q - Quick-change chuck
<b>Tool Version</b> P - Pistol grip			<b>Options</b> S - Barcode scanner - None			<b>Max. Torque (Nm)</b> 0.5 - 5 Nm 0.7 - 7 Nm 0.9 - 9 Nm 13 - 13 Nm	
<b>Data Transfer</b> - WLAN: Dual band 2.4 GHz, 5 GHz - Xbee: IEEE 802.15.4 (4 tools per access point)							

Pistol Grip Nutrunner	Torque Range	Free Speed (rpm)			Weight w/o Battery	Output Drive Size Hex	Length	Height with Battery & Scanner	
		Batteries		PM48				26 V	44 V
Order No.	Nm	26 V*	44 V*	48 V	kg		mm	mm	
17BPYSB05Q	3-5	1639	2428	2428	1.52	1/4"	220	330	318
17BPYSB07Q	3-7	1161	1721	1721	1.52	1/4"	220	330	318
17BPYSB09Q	3-9	887	1314	1314	1.52	1/4"	220	330	318
17BPYSB13Q	3-13	629	931	931	1.52	1/4"	220	330	318

\*Free speed with fully charged battery.

All tools must be used with a suitable Cleco/DGDnutrunner controller or PC software solution.

Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

Batteries, battery chargers, scanner, sockets and bits are not included in the standard equipment. You will find all accessories on pages 133 and 134 of this catalogue.

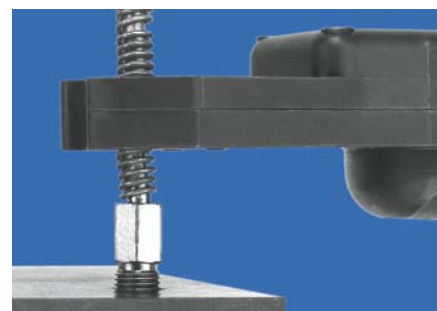


## Tube Nut Series

**Torque range**  
10 - 40 Nm

**Bolt size**  
M6 - M8

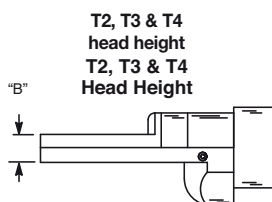
- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo



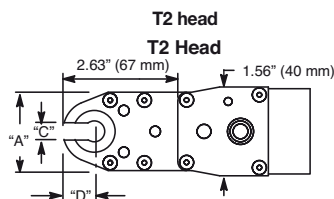
On the 47BT tube nutrunner a single lever controls the tightening of the fastener and the return of the hex socket to the open position. This flexibility paired with proven performance significantly increases productivity during assembly.



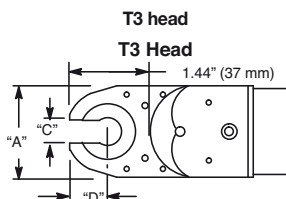
47BTYSB20T2



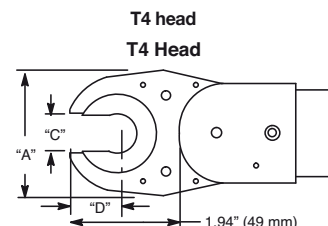
T2, T3 & T4 head height  
T2, T3 & T4 Head Height



T2 head  
T2 Head



T3 head  
T3 Head



T4 head  
T4 Head

### Tube nutrunner nomenclature

47	B	T	X	X	X	XX	KSX	XX	XX	X
----	---	---	---	---	---	----	-----	----	----	---

**Motor**  
47 B- Batt./PM48

**Supply**  
B- Batt./PM48

**Tool Version**  
T - Tube nut wrench

**Data Transfer**  
Y - WLAN: Dual band 2.4 GHz, 5 GHz - None  
Z - Xbee: IEEE 802.15.4  
(4 tools per access point)

**Options**  
S - Barcode scanner

**Input Voltage**  
B-26V-48V

**Head Size**  
T2 - 20 Nm  
T3 - 30 Nm  
T4 - 40 Nm

### Socket identifier

**Head Size**  
KS2 - T2  
KS3 - T3  
KS4 - T4

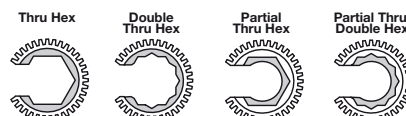
**Type of Output Drive**  
0 - Partial thru hex  
1 - Thru hex  
2 - Double thru hex  
3 - Partial double thru hex

**Extensions**  
0 - Flush  
1 - 1/4"  
2 - 1/4"  
3 - 1/4"  
4 - 1/2"  
5 - 3/4"

**Max. Hex Socket Sizes**  
MG, EE T2 head version  
MM, 3/4" T3 head version  
MU, 1 1/16" T4 head version  
00, ## (special) All head versions

### Socket Sizes

EA - 1/4"	M5 - 5 mm	MH - 14 mm	MP - 22 mm
EC - 3/8	M6 - 6 mm	MI - 15 mm	MQ - 23 mm
EE - 1/2	MA - 7 mm	MJ - 16 mm (5/8")	MR - 24 mm (15/16")
EF - 9/16	MB - 8 mm (5/16)	MK - 17 mm	MS - 25 mm
EH - 11/16	MD - 10 mm	ML - 18 mm	MT - 26 mm
EJ - 13/16	ME - 11 mm (7/16)	MM - 19 mm (3/4")	MU - 27 mm (1 1/16")
EK - 7/8	MF - 12 mm	MN - 20 mm	
EM - 1	MG - 13 mm	MO - 21 mm	



Tube Nutrunner	Torque Range	Free Speed (rpm)			Weight w/o Battery	Output Drive Size	Length with Battery		Head			
		Batteries		PM48			26 V	44 V	A	B	C	D
Order No.	Nm	26 V*	44 V*	48 V	kg		mm	mm	mm	mm	mm	mm
47BTYSB20T2	10-20	260	455	455	2.57	1/2"	598	579	36	14	7	13
47BTYSB30T3	15-30	188	329	329	2.57	3/4"	588	569	42	15	12	19
47BTYSB40T4	20-40	141	247	247	2.93	1 1/16"	612	593	60	15	17	24

\*Free speed with fully charged battery.

**General:** All tools must be used with a suitable Cleco/DGDNutrunner controller or PC software solution.  
Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

**Optional accessories:** Batteries and battery chargers are not included the standard equipment. You will find all accessories on pages 133 and 134 of this catalogue.

For special versions of sockets, please use the prefix "KS" (e. g.: KS2EA01 for a T2 head, 1/4", flush, thru hex)

# Cordless Crowfoot Nutrunners With Transducer

## Crowfoot Series

**Torque range**  
10.5 - 30 Nm

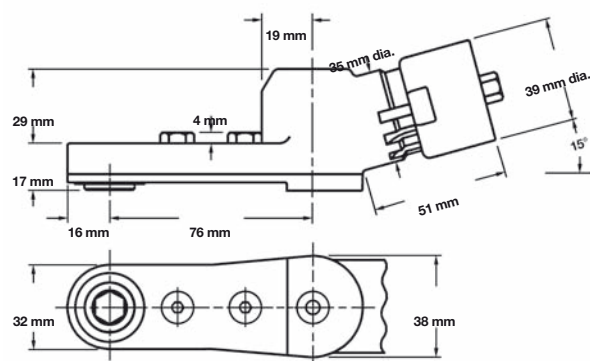
**Bolt size**  
M6 - M8

- Brushless precision motor
- High-resolution resolver
- Exact torque measurement by transducer
- Integrated electronic intelligence with power management and I/O signal processing
- Integrated servo

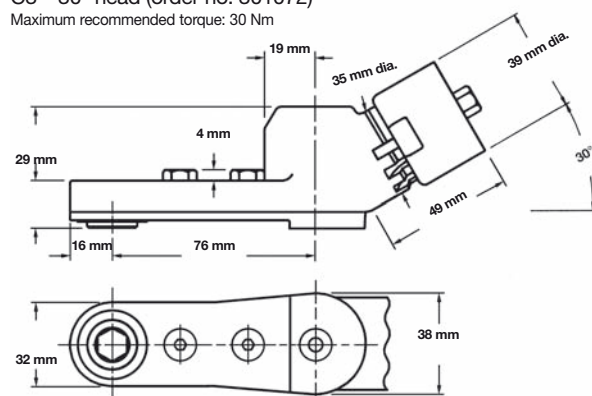


47BCYSB30C1

C1 – 15° head (order no. 301071)  
Maximum recommended torque: 30 Nm



C3 – 30° head (order no. 301072)  
Maximum recommended torque: 30 Nm



### Crowfoot nutrunner nomenclature

### Socket identifier

47	B	C	X	X	B	XX	CS	XX	X	X
Motor 47	Supply B – Batt./PM48				Input Voltage B – 26V-48V		Head CS – Crowfoot			Type of Output Drive 1 – Thru hex
Tool Version C – Crowfoot nutrunner					Options S – Barcode scanner – None	Head Version C1 – 15° C3 – 30°			Extensions 0 – Flush 4 – 1/2" 6 – 3/4"	
Data Transfer Y – WLAN: Dual band 2.4 GHz, 5 GHz Z – Xbee: IEEE 802.15.4 (4 tools per access point)									Socket Sizes	
									EA – 1/4" MA – 7 mm MF – 12 mm	
									EC – 3/8 MB – 8 mm (5/16) MG – 13 mm	
									EE – 1/2 MC – 9 mm MH – 14 mm	
									EF – 9/16 MD – 10 mm MI – 15 mm	
									ME – 11 mm (7/16)	

Crowfoot Nutrunner	Torque Range	Free Speed (rpm)			Weight Without Battery	Output Drive Size	Length with Battery	
		Batteries		PM48			26 V	44 V
Order No.	Nm	26 V*	44 V*	48 V	kg	mm	mm	
47BCYSB30C1	10.5-30	186	326	326	2.81	15	667	648
47BCYSB30C3	10.5-30	186	326	326	2.81	15	660	641

\* Free speed with fully charged battery.

**General:** All tools must be used with a suitable Cleco/DGDnutrunner controller or PC software solution.

Weight of the batteries 26-V Li-ion battery 0.50 kg, 44V Li-ion battery 0.85 kg

**Optional accessories:** Batteries and battery chargers are not included the standard equipment. You will find all accessories on pages 133 and 134 of this catalogue.

For special versions of sockets, please use the prefix "CS" (e.g.: CSEE01 for 1/2", flush, thru hex)

**Cordless  
Freedom**

**or**

**Corded  
High-Speed**



**The Choice  
Is Yours.**

**vmax™**

## 44V Li-Ion Battery Technology

- Up to 83 % faster than with 26 V battery
- Up to 1700 fastening operations/battery charge (hard fastening case)
- Service life > 800 charging cycles
- Integrated intelligence
  - Display for charge state, charging cycles
  - PC diagnostics interface (936492PT)
- Battery can be changed with 1 hand, 1 central locking tab

To ensure maximum availability, the cells and the electronics are embedded in an optimally designed holder.



Central locking tab



5-segment display for additional status information on the battery

Charge cycles – ind. after removal from charger\*

Indication	Charge Cycles
0 - 199	
200 - 399	
400 - 599	
600 - 799	
> 800	

\* Flashing indication for 5 sec. after battery is removed from the battery charger.

Charge state – indication with active battery\*

Indication	Charge State
Sleep mode or faulty	
< 20 %	
20 - 40 %	
40 - 60 %	
60 - 80 %	
80 - 100 %	

\* Normal indication as long as battery is not in the sleep mode.



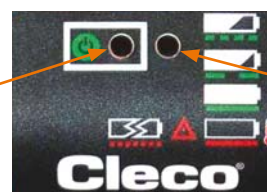
## Multi-Battery Charger for 26/44 V Batteries

- Automatic battery detection 26 V/44 V
- Charging time only 1 hour
- Autom. wide range input (85-275 VAC)
- LEDs for supply voltage and status

### Charger Indication for Informative State Information

#### Supply Voltage

LED Indic.	Status
No supply voltage	
Supply voltage OK	



#### Red/green LED for Charge State and Fault

LED Indication	Status
No indication	No battery inserted
Slow green flashing (0.5 Hz)	Charge state > 80 %
Fast green flashing (1 Hz)	Charge state < 80 %
Green flashing	Charge state battery 100 %
Red flashing	Excessively high battery cell temperature
Fast red flashing (2 Hz)	Battery fault (Short circuit, faulty cells, etc.)



## LiveWire Power Module PM 48

- Up to 83 % higher speeds!
- Wide range input – (85-275 VAC)
- LEDs for power & status
- Electronic monitoring
- Solid metal housing
- Low weight – only 3.1 kg



### Power Module

Order No.	Weight kg	Width mm	Height mm	Depth mm
961350PT	3.1	240	120	150

2 m cable included

### Comparison of the Speed Increase

Series	Tool Type	Free Speed (rpm)		Increase in %
		26 V Battery	48 V Power Module	
Pistol grip design	17BPYSB05Q	1639	2428	48 %
	17BPYSB07Q	1161	1721	48 %
	17BPYSB09Q	887	1314	48 %
	17BPYSB13Q	629	931	48 %
Right angle design	47BAYSB15AM3	538	983	83 %
	47BAYPB15AM3L	538	983	83 %
	47BAYSB21AM3	411	751	83 %
	47BAYPB21AM3L	411	751	83 %
	47BAYSB28AM3	291	532	83 %
	47BAYPB28AM3L	291	532	83 %
	47BAYSB35AM3	244	447	83 %
	47BAYPB35AM3L	244	447	83 %
	47BAYSB50AM3	168	293	75 %
	47BAYPB50AM3L	168	293	75 %
	47BAYSB70AH4	123	216	75 %

## mPro400GC Nutrunner Controller

- Up to 16 tools per controller (LiveWire + corded + inline floating spindle nutrunners)
- 10.4" display with extra wide viewing angle
- Touchscreen with screen keypad
- Compatible with corded and cordless tools
- Redundant Ethernet and fieldbus connections
- Serial and USB interfaces
- 8 configurable I/O 24 V
- Separate system bus
- Fieldbus module optional

### mPro400GC nomenclature

MPRO	400GC	X
Type of Nutrunner Controller	Series	Type
		M – Master P – Primary



### Nutrunner Controller

Order No.*	Description	Weight kg	Width mm	Height mm	Depth* mm
MPRO400GC-M	Master controller, touchscreen display, no servo module, fieldbus modules optional	10.6	267	381	336
MPRO400GC-P	Primary controller, touchscreen display, integrated servo module for corded hand-held nutrunners, fieldbus optional	14	267	381	336

\*Including mounting plate



The LiveWire battery tools can also be used on the nutrunner controllers mPro400S/ mPro400SE/ mPro400SG/ CPM3/ CPM6/ CPM9 and on other DGD/ Cleco controllers. Ask us - we will offer you the best possible, most effective solutions for your fastening processes.



## Batteries

Order No.	Description	Weight kg
935377	26 V Li-ion	0.50
936400PT	44 V Li-ion	0.85



## Battery Chargers

Order No.	Description
935391	26 V battery charger
936491PT	26 V/44 V batt. charger



## Vmax Power Module

Order No.	Weight kg	Width mm	Length mm	Depth mm
961350PT	3.1	240	120	150

2m power cable incl.

## LiveWire 2 Scanner

Order No.	Description
937240PT	Barcode scanner for "L" tools



## Vmax Cables

Order No.	Tool Cable	Extension
961341-***	961342-***	
961369-060	--	

\*\*\*Length: 030=3 m, 060=6 m,  
080=8 m, 100=10 m  
Maximum 20 m total length



## Upgrade Kit 2.4 GHz to 5 GHz

Upgrade kits from 2.4 GHz to 5GHz allow you to upgrade older tools. Ask one of our sales and service centres for a suitable solution.

## LiveWire WLAN Access Points

Order No.	Description
961390	XBEE 802.15.4 base station
961300	868 MHz base station (only for EU)
544249PT	WLAN dual-band access point 2.4/5 GHz (US) incl. antennas
961453PT	WLAN dual-band access point 2.4/5 GHz (EU) incl. antennas

WLAN range: 30-50 m, XBEE 30 m max.  
IEEE 802.11a/b/g/n (depending on tool)  
Max. 16 tools per WLAN access point



## Diagnostics Device for 44 V Batteries

Order No.	Description
936492PT	Battery diagnostic device incl. software CD

- USB interface to the PC
- Indication for discharge cycles, total voltage and voltage per cell
- Ideal for battery monitoring
- Simplified troubleshooting

Battery service interface enables charge cycles and cell voltages to be read via USB



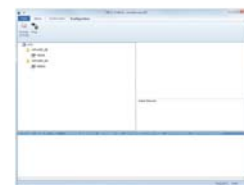
## Compact Flash Cards Suitable for mPro400GC / SG Controllers

Order No.	Description
S961592	Compact Flash card 1GB (blank)
S961593	Compact Flash card 2GB (blank)



## Software

Order No.	Description
S168677	mProRemote.Net software for remote programming and control of all mPro systems



## Tool Holders

Order No.	Description
935144	Tool holder for pistol grip tools incl. IrDA
935396	Tool holder for pistol grip tools
935290	Tool holder for right angle tools up to 50 Nm incl. IrDA
935395	Tool holder for right angle tools up to 50 Nm
935170	Infrared interface with cable
935998	Tool holder for right angle tools from 70 Nm
935999	Tool holder for right angle tools from 70 Nm incl. IrDA



## Serial Extension Cables for Tool Holder

Order No.	Description
935154	3 m extension cable for tool holder IrDA
935155	6 m extension cable for tool holder IrDA
935157	10 m extension cable for tool holder IrDA

# Accessories for Cordless LiveWire Fastening Technology

## Fieldbus Modules

Order No.	Module Description
544171PT	Fieldbus Devicenet
544172PT	Fieldbus Ethernet-IP 1 x RJ45
544278PT	Fieldbus Ethernet-IP 2 x M12
544173PT	Fieldbus Profibus DB9
544174PT	Fieldbus Profinet 2 x RJ45
544211PT	Fieldbus Modbus/TCP 1 x RJ45



**544172PT**  
Fieldbus  
Ethernet-IP 1 x RJ45



**544278PT**  
Fieldbus  
Ethernet-IP 2 x M12



**544174PT**  
Fieldbus  
Profinet 2 x RJ45



**544171PT**  
Fieldbus  
Devicenet



**544173PT**  
Fieldbus  
Profibus DB9



**544211PT**  
Fieldbus  
Modbus/TCP

## System Bus Accessories

Order No.	Description
S133405	System bus stack lamp without buzzer
S133406	System bus control box with buzzer
S133410	System bus 4-position socket tray
S133411	System bus 8-position socket tray
S133420	System bus stack lamp with buzzer
S133436	System bus 32 I/O expansion with housing
S133437	System bus 16 I/O expansion with housing
S961830	System bus 16 I/O expansion (built-in module for control cabinets)
960392	System bus 32 I/O expansion (built-in module for control cabinets)



**S133420**  
Stack light



**S133410**  
Socket  
tray



**S133406**  
Control box  
with buzzer

## LiveWire Additional Grip

Order No.	Description
301837	Additional handle for pistol grip tools



**301837**

## Tool Suspension Bails

Order No.	Description
1110909	Standard tool suspension bail (not for LiveWire 2 L Series)
S387983	Rotating suspension bail for right angle nutrunner (not for LiveWire 2 L Series)
S387884	Rotating suspension bail with bracket for right angle nutrunner (not for LiveWire 2 L Series)



**S387983**



**1110909**



**S387884**

## Protective Tool Covers

Order No.	Description
936372	Protective covers for right angle tool 47BA..15-28AM3 Also suitable for LiveWire 2 tools.
936373	Protective covers for right angle tool 47BA..35-50AM3 Also suitable for LiveWire 2 tools.
936424PT	Protective covers for scanner on 47BA tools Not suitable for LiveWire 2 tools.
937210PT	Protective covers for display on 47BA tools Not suitable for LiveWire 2 tools.
936489PT	Protective covers for pistol grip tools 17BP..



**936489PT**



**936489PT**



**936372**



**936372**

## Accessory Cables

Order No.	Description
960225	Ethernet patch cable - 2 m
960007	Serial null module cable - 3 m
935170	Serial interface IrDA with cable - 1 m
S133408-005	System bus cable - 0.5 m
S133408-020	System bus cable - 2 m
S133408-050	System bus cable - 5 m
S133408-200	System bus cable - 20 m
S133408-500	System bus cable - 50 m
S133412	System bus terminating connector



**960007**



**960225**



**S-133408-020**



**S133412**



**935170**

	Model Name	Description	Torque Range	Output Drive	Length	Weight
			(Nm)	(mm)	(mm)	(kg)
I - W R E N C H	I-Wrench 15	Torque & angle wrench	1.5 - 15	9 x 12	393	0.80
	I-Wrench 30	Torque & angle wrench	3 - 30	9 x 12	393	0.86
	I-Wrench 70	Torque & angle wrench	7 - 70	9 x 12	498	0.93
	I-Wrench 100	Torque & angle wrench	10 - 100	9 x 12	498	0.93
	I-Wrench 200	Torque & angle wrench	20 - 200	14 x 18	629	1.50
	I-Wrench 300	Torque & angle wrench	30 - 300	14 x 18	779	1.86
	I-Wrench 400	Torque & angle wrench	40 - 400	14 x 18	879	2.00
	I-Wrench 600	Torque & angle wrench	60 - 600	14 x 18	1057	3.65
	I-Wrench 800	Torque & angle wrench	80 - 800	Ø 20	1330	5.10
	I-Wrench 1000	Torque & angle wrench	100 - 1000	Ø 20	1610	6.25
	I-Wrench 1200	Torque & angle wrench	120 - 1200	Ø 20	1715	7.00



	Product Number	Description
	No Barcode Scanner, with Rubber Protection, with WLAN Module, with Tool Detection	
N O M E N C L A T U R E	PRW-0015-0110-WI	Cleco LiveWire I-Wrench 15
	PRW-0030-0110-WI	Cleco LiveWire I-Wrench 30
	PRW-0070-0110-WI	Cleco LiveWire I-Wrench 70
	PRW-0100-0110-WI	Cleco LiveWire I-Wrench 100
	PRW-0200-0110-WI	Cleco LiveWire I-Wrench 200
	PRW-0300-0110-WI	Cleco LiveWire I-Wrench 300
	PRW-0400-0110-WI	Cleco LiveWire I-Wrench 400
	PRW-0600-0110-WI	Cleco LiveWire I-Wrench 600
	PRW-0800-0110-WI	Cleco LiveWire I-Wrench 800
	PRW-1000-0110-WI	Cleco LiveWire I-Wrench 1000
	PRW-1200-0110-WI	Cleco LiveWire I-Wrench 1200
	With Barcode Scanner, with Rubber Protection, with WLAN Module, with Tool Detection	
	PRW-0015-1110-WI	Cleco LiveWire I-Wrench 15
	PRW-0030-1110-WI	Cleco LiveWire I-Wrench 30
	PRW-0070-1110-WI	Cleco LiveWire I-Wrench 70
	PRW-0100-1110-WI	Cleco LiveWire I-Wrench 100
	PRW-0200-1110-WI	Cleco LiveWire I-Wrench 200
	PRW-0300-1110-WI	Cleco LiveWire I-Wrench 300
	PRW-0400-1110-WI	Cleco LiveWire I-Wrench 400
	PRW-0600-1110-WI	Cleco LiveWire I-Wrench 600
	PRW-0800-1110-WI	Cleco LiveWire I-Wrench 800
	PRW-1000-1110-WI	Cleco LiveWire I-Wrench 1000
	PRW-1200-1110-WI	Cleco LiveWire I-Wrench 1200



## Explanation of Nomenclature

P	R	W
---	---	---

I-Wrench for production

0	0	1	5
---	---	---	---

0015-1200 - I-Wrench torque

0	1	1	0
---	---	---	---

0110 - No barcode scanner, with rubber protection  
1110 - With barcode scanner, with rubber protection

W	I
---	---

WI - with WLAN module

# Cordless. Flexible.

## Your Productivity – Your Freedom

Our Cleco LiveWire I-Wrench is a really universal production tool for meeting your flexible manufacturing needs. It is the perfect tool for fastening operations on your components. It is also suitable for your production line, as it enables you to use various fastening strategies with torque/angle. The patented angle measurement system, the colour touchscreen and the high memory capacity of 1 GB make the Cleco LiveWire I-Wrench the most flexible and versatile torque/angle wrench on the market.



Torque correction factor /  
angle for special tools



## Production

- WLAN 2.4 and 5 GHz.
- Client or stand-alone.
- Torque tightening with angle monitoring.
- Angle tightening with torque monitoring.
- Wireless data and curve transfer to the Global Controller.



# User-Friendly.

## Precision

- $\pm 0.5\%$  display error at 20% - 100% nominal torque
- $\pm 1\%$  display error at 10% - 20% nominal torque
- $\pm 0.5^\circ$  display error on the angle



## Navigation

Menu prompts with colour touchscreen display or navigation buttons

- Torque & angle data
- Graphs on the controller
- Application images

## Features

- 1 GB memory for
- 20000 measurements
- 20000 graphs
- 1000 parameter sets
- 9 hrs. battery operating time



# LiveWire I-Wrench Specifications

A C C E S S O R I E S	Model Number	Model Name	Description
	Accessories on the Tool		
	313110030	I-Wrench-DRP	Rubber protection with screen protection
	Other Accessories		
	197140013	I-Wrench-PU	Programming unit with tool detection
	197130020	TAW-PSS3-RP 15/30	Charging station for Cleco LiveWire I-Wrench 15/30 Nm with rubber protection
	197130021	TAW-PSS3-RP 70/100	Charging station for Cleco LiveWire I-Wrench 70/100 Nm with rubber protection
	197130022	TAW-PSS3-RP 200	Charging station for Cleco LiveWire I-Wrench 200 Nm with rubber protection
	197130023	TAW-PSS3-RP 300	Charging station for Cleco LiveWire I-Wrench 300 Nm with rubber protection
	197130024	TAW-PSS3-RP 400	Charging station for Cleco LiveWire I-Wrench 400 Nm with rubber protection
	197130025	TAW-PSS3-RP 600	Charging station for Cleco LiveWire I-Wrench 600 Nm with rubber protection
	197130026	TAW-PSS3-RP 800	Charging station for Cleco LiveWire I-Wrench 800 Nm with rubber protection
	197130027	TAW-PSS3-RP 1000	Charging station for Cleco LiveWire I-Wrench 1000 Nm with rubber protection
	197130028	TAW-PSS3-RP 1200	Charging station for Cleco LiveWire I-Wrench 1200 Nm with rubber protection
	313210042	I-Wrench-BA	Li-ion battery 3.7 V
	197140017	I-Wrench-EC1	External battery charger for 1 battery with J21
	197140018	I-Wrench-EC2	External battery charger for 2 batteries with JS22
	197990008	I-Wrench-USB	USB cable 2 m
	961453PT	Access point	WLAN dual-band access point 2.4 & 5 GHz (EU) incl. antennas
	961323	Access point	WLAN dual-band access point 2.4 GHz (EU)
	333110016	Chip	Chip for tool detection
	102110003	SQnet	SQnet FTA software for programming & downloading data (stand-alone mode)
Further accessories available on request. Please contact our sales & service centres.			
Please note: Ratchets are not included and must be ordered separately. This statement also applies to sockets that you can order from our Apex bits & sockets range.			



**Rubber protection with screen protection**



**Programming unit with tool detection**



**Li-ion battery 3.7 V**



**USB cable 2 m**



**PRW charging cradle**



**Dual-band access point**



**External charger 2 batteries**



**External charger 1 battery**

R A T C H E T S	Without Tool Detection (Fully Prepared for the Installation of Tool Detection)		With Tool Detection	
	Model Number	Description	Model Number	Description
	197170001	9 x 12 - 1/4"	197179001	TR 9 x 12 - 1/4"
	197170002	9 x 12 - 3/8"	197179002	TR 9 x 12 - 3/8"
	197170003	9 x 12 - 1/2"	197179003	TR 9 x 12 - 1/2"
	197170005	14 x 18 - 1/2"	197179005	TR 14 x 18 - 1/2"
	197170006	14 x 18 - 3/4"	197179006	TR 14 x 18 - 3/4"
	197170007	Ø 20 - 3/4"		
	197170008	Ø 20 - 1"		
	197170146	Insert for customer spec. application 9 x 12		
	197120147	Insert for customer spec. application 14 x 18		



O P E N - E N D E D  I N S E R T  T O O L S	Product Description	Product No. Without Tool Detection	Product No. With Tool Detection
	7 mm 9X12	197 17 0024	197 17 9024
	8 mm 9X12	197 17 0025	197 17 9025
	9 mm 9X12	197 17 0026	197 17 9026
	10 mm 9X12	197 17 0027	197 17 9027
	11 mm 9X12	197 17 0028	197 17 9028
	12 mm 9X12	197 17 0029	197 17 9029
	13 mm 9X12	197 17 0030	197 17 9030
	14 mm 9X12	197 17 0031	197 17 9031
	15 mm 9X12	197 17 0032	197 17 9032
	16 mm 9X12	197 17 0033	197 17 9033
	17 mm 9X12	197 17 0034	197 17 9034
	18 mm 9X12	197 17 0035	197 17 9035
	19 mm 9X12	197 17 0036	197 17 9036
	13 mm 14X18	197 17 0037	197 17 9037
	14 mm 14X18	197 17 0038	197 17 9038
	15 mm 14X18	197 17 0039	197 17 9039
	16 mm 14X18	197 17 0040	197 17 9040
	17 mm 14X18	197 17 0041	197 17 9041
	18 mm 14X18	197 17 0042	197 17 9042
	19 mm 14X18	197 17 0043	197 17 9043
	21 mm 14X18	197 17 0044	197 17 9044
	22 mm 14X18	197 17 0045	197 17 9045
	24 mm 14X18	197 17 0046	197 17 9046
	25 mm 14X18	197 17 0047	197 17 9047
	27 mm 14X18	197 17 0048	197 17 9048
	30 mm 14X18	197 17 0049	197 17 9049
	32 mm 14X18	197 17 0050	197 17 9050

Further open-ended and ring insert tools are available on request. Please contact our sales & service centres.

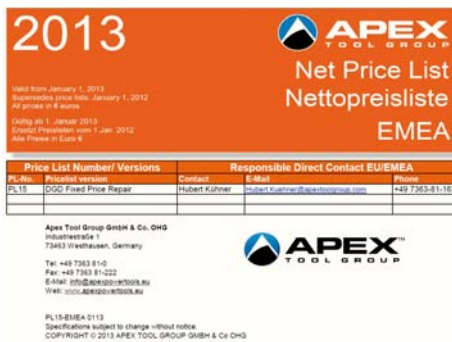
# Repair. Service. Support.

## Service & Support

Even the most reliable tools require maintenance and care from time to time. The Apex Tool Group is also your capable partner for service and maintenance to ensure that your productivity is retained.

## Fixed Price Repair

The Apex Tool Group offers fixed price repairs in accordance with your requirements and wishes.



**Quotations** for repairs without delays and loss of time.



**Repairs** are undertaken by our qualified staff.



**Production** in your organisation with the tool in use.

## Optimised Processes – Quick & Cost-Effective

- The Apex Tool Group service centres will take over all service and repair tasks for Apex Tool Group products.
- The Apex Tool Group service centres, representatives and subsidiaries will provide you directly with quotations and prices.
- The service processes are subject to continuous optimisation such that development, troubleshooting and return can be undertaken as quickly as possible.

## Fixed Price Repair Services

- All costs known.
- No surprises due to parts or labour.
- Defined repair tasks.
- No additional administrative costs.
- No quotation processing for you.

## Service Engineers

- Our service engineers have extensive training in the maintenance and repair of all Apex Tool Group products.
- Continuous further training of our team ensures our engineers have the necessary specialist knowledge and skills for future tasks.

**Cost and Time Saving and No Surprises!**



# After Sales Service.

## Genuine Spare Parts



The Apex Tool Group service centres only use genuine spare parts. As a consequence the performance and reliability of the tools again meet the high requirements on Apex Tool Group products.

## Certification

Our latest nutrunner inspection systems with hybrid technology can be traced back to the standards used in a DKD laboratory, which operates in accordance with DIN EN ISO / IEC 17025, as well as a calibration certificate in accordance with VDI / VDE 2646.

## After Sales Service

The Apex Tool Group service centres offer much more than just service and repairs. Our additional services as part of our after sales service:

- Training courses for applications & repairs.
- Seminars on systems & fastening technology.
- Service concepts for fastening technology.
- Preventive maintenance and customer service.
- Machine capability verification based on VDI/VDE 2647.
- Optimisation of your screw fastening processes.
- Support during the commissioning of fastening technology.
- Spare parts, spare part kits.
- Software solutions and expansions.
- Remote maintenance (online support, remote access).

## Sales Centres

There are Apex Tool Group service centres all over the world to ensure there is always somebody close to you. Our strategy is to continuously optimise and expand our Apex Tool Group service centres for your future service and repair tasks.

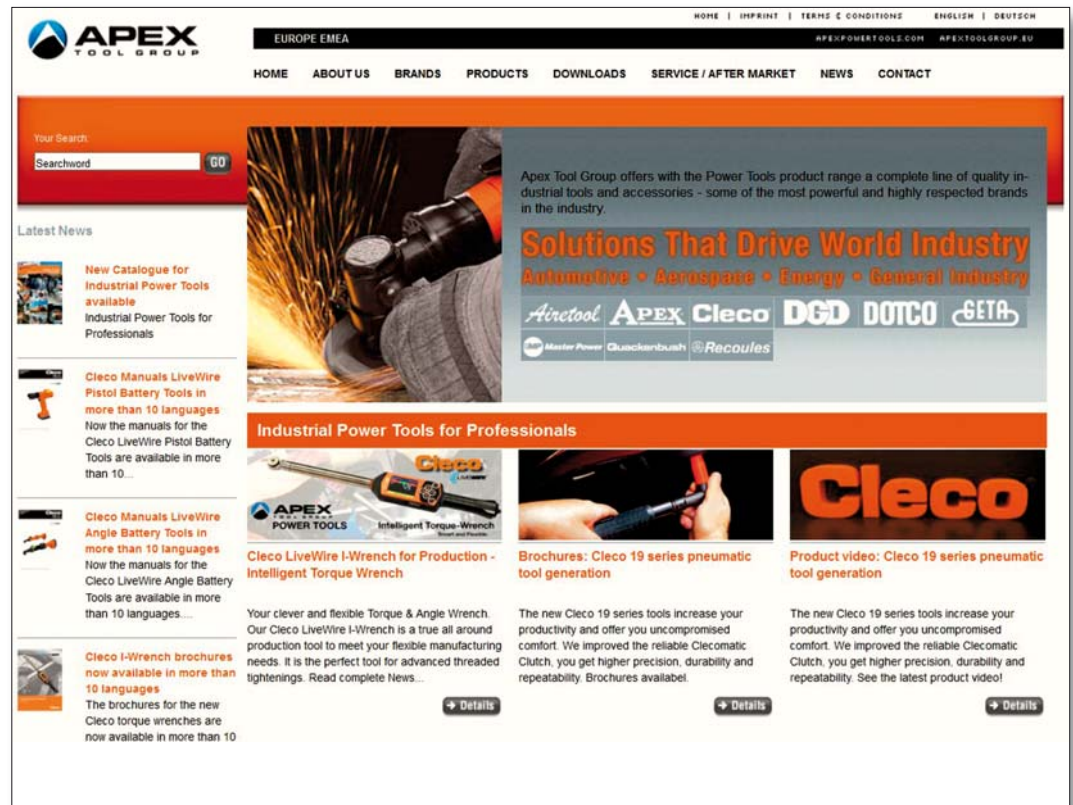
Please contact your local sales and service centre on service issues. The after sales support services available may vary depending on the location and may be adapted to specific market requirements.

You will also find our regional dealer and sales partner network on our website [www.apexpowertools.eu](http://www.apexpowertools.eu).



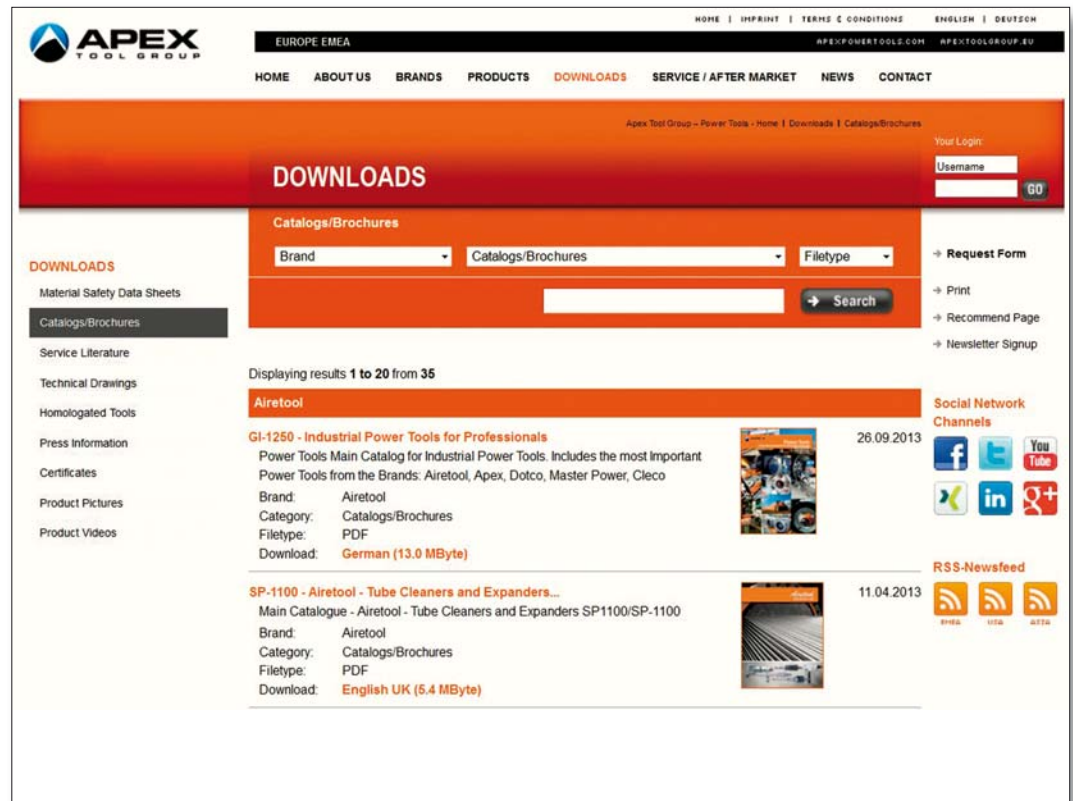
## Strong Brands

With the Power Tools division, the Apex Tool Group offers a complete series of high quality industrial tools and related accessories – some of the most powerful and respected brands in the industry.



## All Information Available Online for Download

Manuals, technical drawings, installation instructions, product images as well as homologation information is available in the download area of our website.



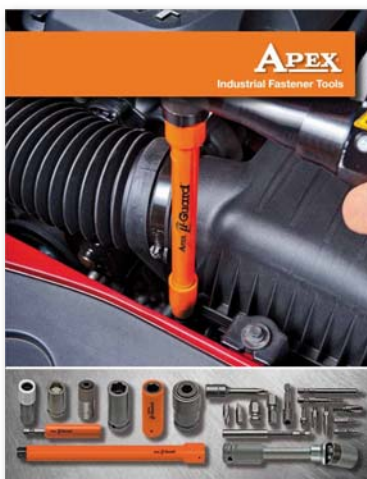
[www.apexpowertools.eu](http://www.apexpowertools.eu)





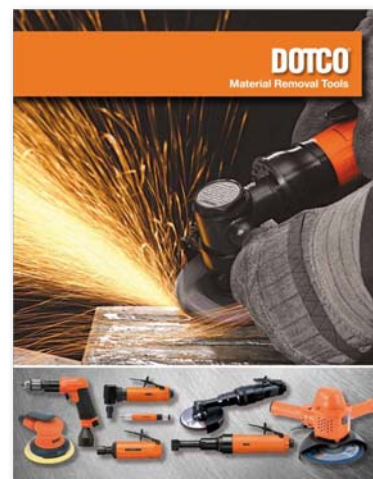
Tube cleaners and expanders,  
rolling motors ...

Catalogue: SP-1100



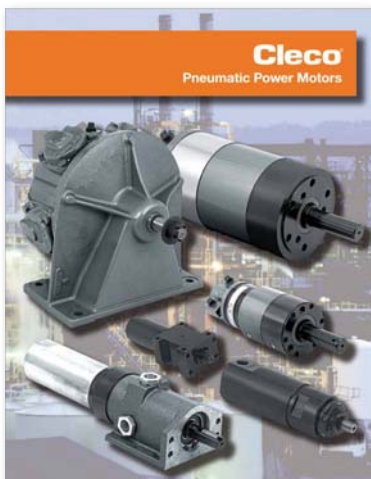
Bits, sockets and universal joints

Catalogue: TC-100



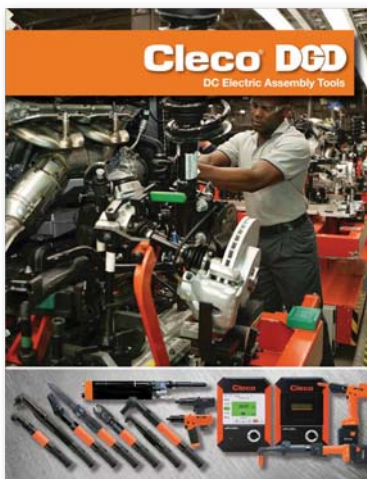
Material removal tools, drills, grinders,  
polishers ...

Catalogue: SP-102



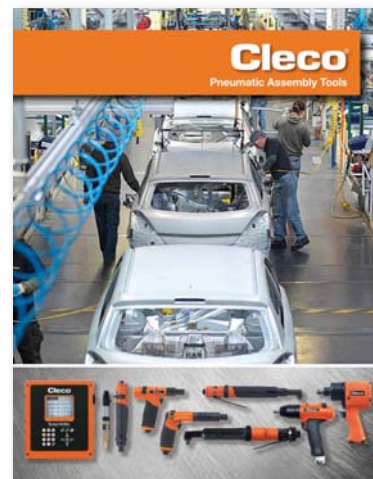
Cleco  
Pneumatic power motors ...

Catalogue: SP-104



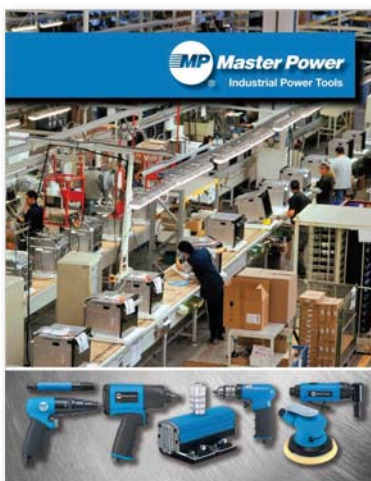
Cleco and DGD  
DC electric assembly tools

Catalogue: SP-1020



Cleco  
Pneumatic assembly tools

Catalogue: SP-1000



Assembly, material removal and  
grinding tools

Catalogue: SP-904



Service/ after market  
services

[www.apexpowertools.eu](http://www.apexpowertools.eu)

## Sales and Service Centres

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United Kingdom  
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You will find local dealers and other sales contacts at  
[www.apexpowertools.eu](http://www.apexpowertools.eu)



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**APEX**  
TOOL GROUP